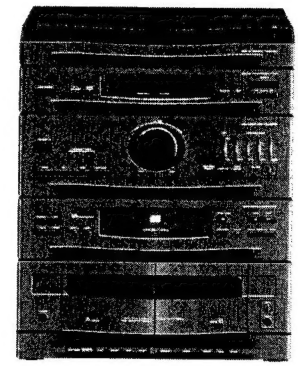
Service
Service
Service



Service Manua

COMPAC
disc
DIGITAL AUDI

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CLASS 1
LASER PRODUCT

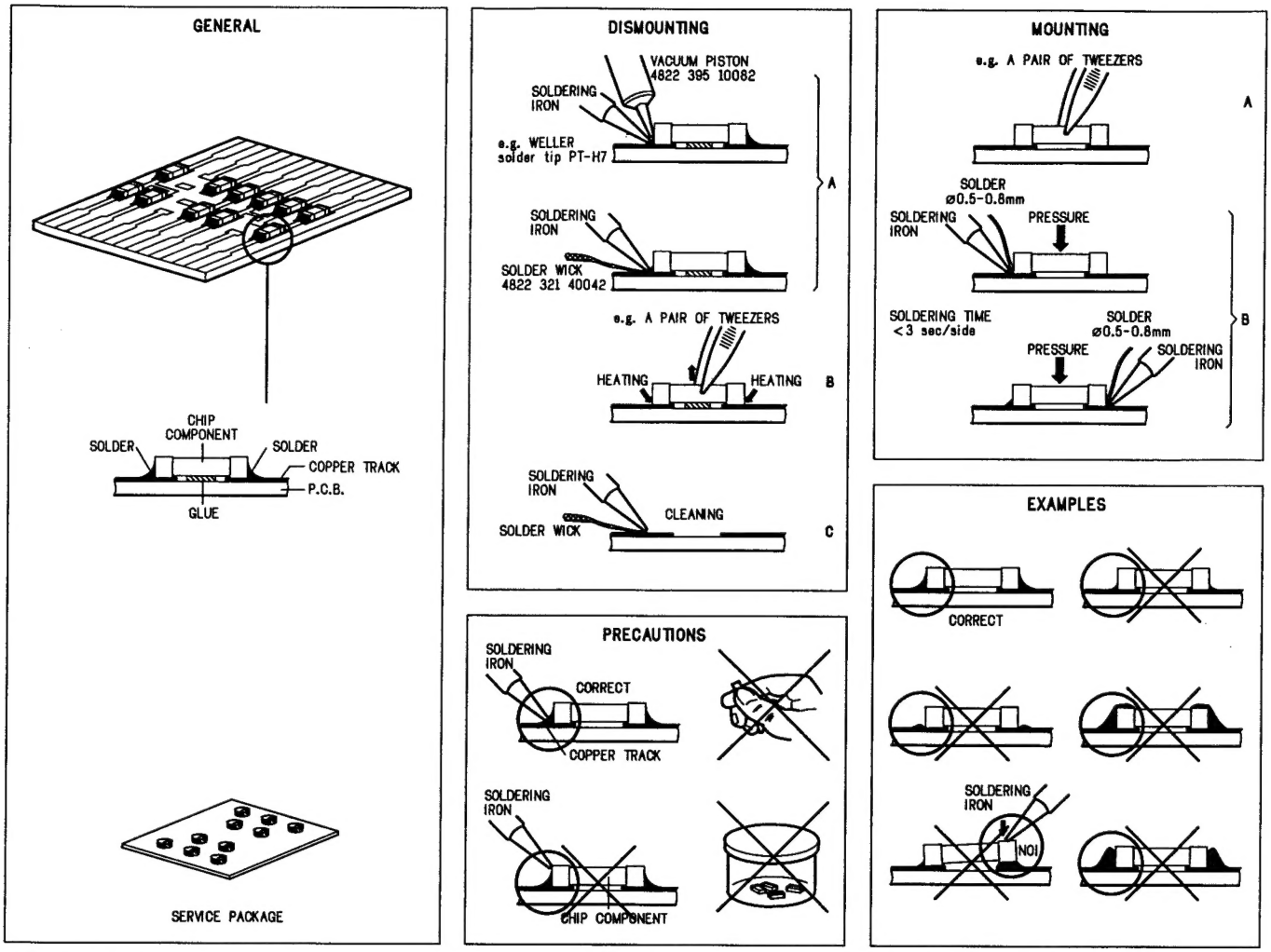
Published by Consumer Electronics Printed in The Netherlands Subject to modification GB 4822 725 2490

PHILIPS

PHILIPS

CS 51 72

HANDLING CHIP COMPONENTS



(GB) WARNING

All ICs and many other semiconductors are susceptible to electrostatic discharges (ESD). Careless handling during repair can reduce life drastically.
When repairing, make sure that you are connected with the same potential as the mass of the set via a wrist wrap with resistance. Keep components and tools at this potential.

(F) ATTENTION

Tous les IC et beaucoup d´autres semi-conducteurs sont sensibles aux décharges statiques (ESD). Leur longévite pourrait être considérablement écourtée par le fait qu´aucune précaution nést prise à leur manipulation.
Lors de réparations, s´assurer de bien être relié au même potentiel que la masse de l´appareil et enfileer le bracelet serti d´une résistance de sécurité.
Veiller à ce que les composants ainsi que les outils que l´on utilise soient également à ce potentiel.

ESD

(D) WARNUNG

Alle ICs und viele andere Halbleiter sind empfindlich gegenüber elektrostatischen Entladungen (ESD).
Unsorgfältige Behandlung im Reparaturfall kann die Lebensdauer drastisch reduzieren.
Sorgen Sie dafür, daß sie im Reparaturfall über ein Pulsarmband mit Widerstand mit dem Massepotential des Gerätes verbunden sind.
Halten Sie Bauteile und Hilfsmittel ebenfalls auf diesem Potential.

(NL) WAARSCHUWING

Alle IC´s en vele andere halfgeleiders zijn gevoelig voor electrostatische ontladingen (ESD).
Onzorgvuldig behandelen tijdens reparatie kan de levensduur drastisch doen vermindern. Zorg ervoor dat u tijdens reparatie via een polsband met weerstand verbonden bent met hetzelfde potentiaal als de massa van het apparaat.
Houd componenten en hulpmiddelen ook op ditzelfde potentiaal.

(I) AVVERTIMENTO

Tutti IC e parecchi semi-conduttori sono sensibili alle scariche statiche (ESD).
La loro longevità potrebbe essere fortemente ridatta in caso di non osservazione della più grande cauzione alla loro manipolazione. Durante le riparationi occorre quindi essere collegato allo stesso potenziale che quello della massa delápparecchio tramite un braccialetto a resistenza.
Assicurarsi che i componenti e anche gli utensili con quali si lavora siano anche a questo potenziale.

(GB)
Safety regulations require that the set be restored to its original condition and that parts which are identical with those specified be used.

(D)
Bei jeder Reparatur sind die geltenden Sicherheitsvorschriften zu beachten. Der Originalzustand des Gerätes darf nicht verändert werden. Für Reparaturen sind Originalersatzteile zu verwenden.

(I)
Le norme di sicurezza estigono che l´apparecchio venga rimesso nelle condizioni originali e che siano utilizzati i pezzi di ricambiago identici a quelli specificati.

(F)
Les normes de sécurité exigent que l´appareil soit remis à l´état d´origine et que soient utilisées les pièces de rechange identiques à celles spécifiées.

(NL)
Veiligheidsbepalingen vereisen, dat het apparaat in zijn oorspronkelijke toestand wordt teruggebracht en dat onderdelen, identiek aan de gespecificeerde, worden toegepast.

(S) Varning !

Osynlig laserstrålning när apparaten är öppnad och spärren är urkopplad. Betrakta ej strålen.

(DK) Advarsel !

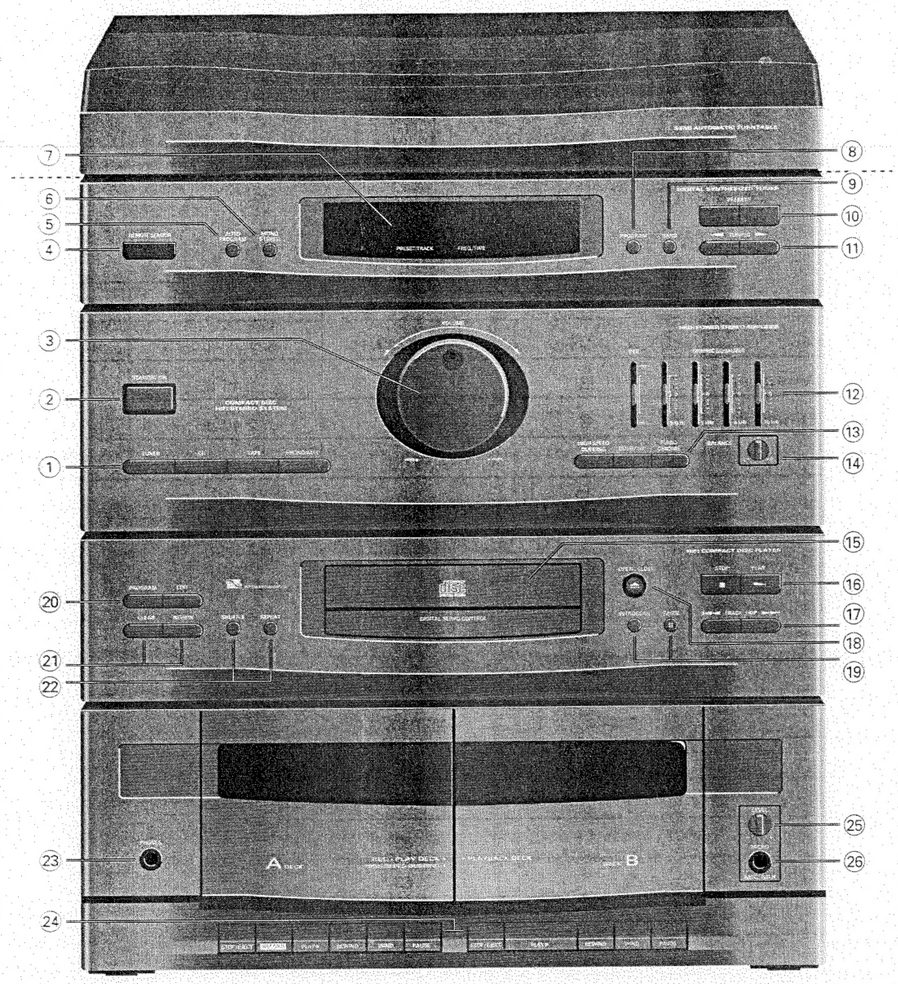
Usynlig laserstråling ved åbning når sikkerhedsafbrydere er ude af funktion. Undgå udsaettelse for stråling.

(SF) Varoitus !

Avatussa laitteessa ja suojalukituksen ohitettaessa olet alttiina näkymättömälle laserisäteilylle. Älä katso säteeseen !

(F)
"Pour votre sécurite, ces documents doivent être utilisés par des spécialistes agrées, seuls habilités à réparer votre appareil en panne".

Connections & Controls



1 Source selector — see page 25, 26
- Tuner 1440
- CD 1438
- Tape 1444
- Phono/Aux 1437

2 Stand by ..... 1439 — see page 29, 30
3 Volume ..... 3480 — see page 25, 26
4 Remote sensor ..... 7422 — see page 25, 26
5 Auto Program ..... 1436 — see page 29, 30
6 Mono/Stereo ..... 1448 — see page 29, 30
7 Display ..... 1415 — see page 29, 30
8 Program (Tuner) ..... 1435 — see page 29, 30
9 Band ..... 1434 — see page 29, 30
10 Presets — see page 29, 30
- Up 1425
- Down 1426

11 Tuning — see page 29, 30
- Up 1421
- Down 1422

12 Graphic Equalizer — see page 25, 26
- 100Hz/DBB 3485
- 300Hz 3484
- 1kHz 3483
- 4kHz 3482
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13 High Speed Dubbing ..1433 — see page 29, 30
- Dolby NR 1420
- Ferro/Chrome 1423

14 Balance ..... 3479 — see page 25, 26

15 CD Tray

16 Play (CD) ..... 1457 — see page 29, 30
- Stop (CD) 1424

17 Track skip (CD)
- |◄◄ ..... 1454 — see page 29, 30
- ►►| ..... 1455 — see page 29, 30

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19 Introscan (CD) ..... 1452 — see page 29, 30
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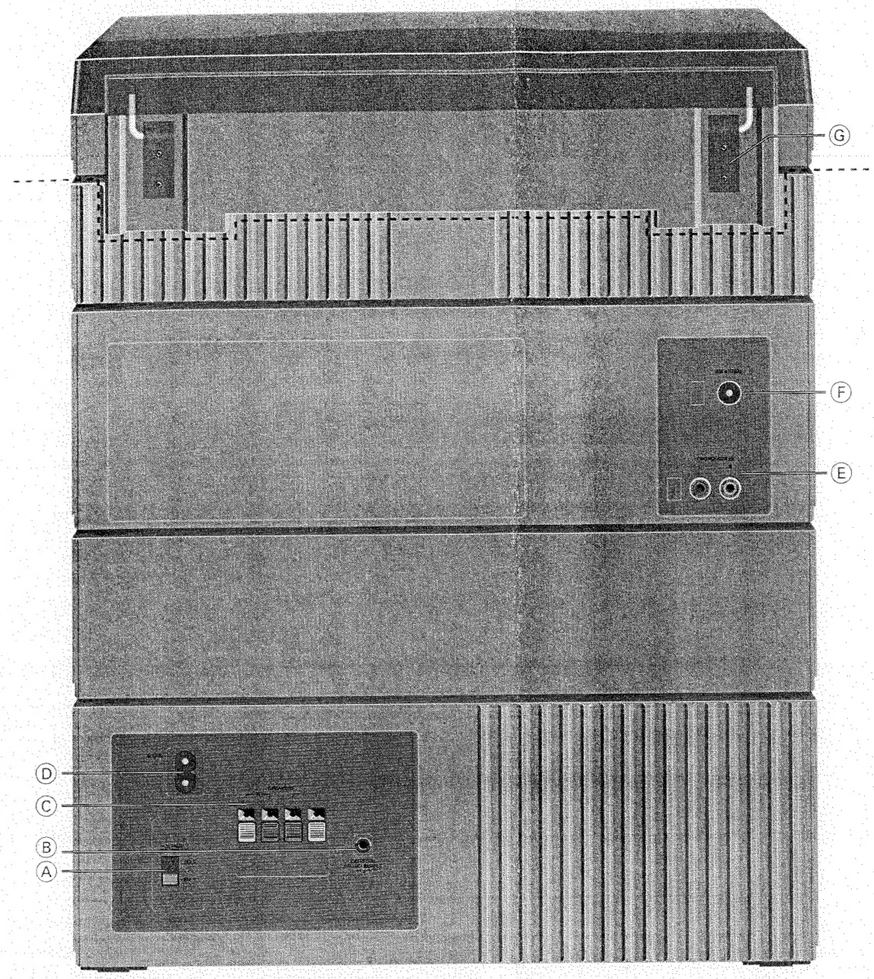
23 Headphone socket ..... 1410 — see page 25, 26
24 Tape transport keys ... mechanical



A Voltage selector ..... 1260 — see page 35
B Phono supply ..... 1305 — see page 33, 34
C Speaker terminal ..... 1304 — see page 33, 34
D Mains socket ..... 1255 — se page 39
E Aux / Phono sockets .. 1408 — see page 25, 26
F FM aerial socket 1101
- for ECO 4 Tuner — see page 42

FM aerial socket 1110
- for Tuner 92 — see page 48

Not on all versions

VOLTAGE SELECTOR
MICRO MIX
RECORD PLAYER

Specification

General:

Mains voltage : 220V / 50Hz for /20, /22
: 240V / 50Hz for /25

Power consumption : ≤ 105 W at maximum output power
: ≤ 10 W in stand by

Amplifier:

Output power : 2 x 20W at 6Ω D=10%
Music power : 2 x 60W at 6Ω
Headphone : 6,3mm stereo jack 25mW at 32Ω (≡0,9V at 32Ω)

Power stage protection : Temperature

Frequency response : 63 Hz - 14 kHz (-3dB) Limit
: 63 Hz - 17 kHz (-3dB) Typical value

Tone control
DBB : ±6dB at 100 Hz
300 Hz : ±6dB at 300 Hz
1 kHz : ±6dB at 1 kHz
4 kHz : ±6dB at 4 kHz
10 kHz : ±6dB at 10kHz

Input sensitivity
PHONO/LINE : 350 mV

Tuner:

	FM	MW	LW
Tuning range	87,5 - 108 MHz Grid 50 kHz	522 - 1611 kHz (Grid 9kHz) 530 - 1700 kHz (only for /37) (Grid 10kHz)	148 - 284 kHz (Grid 3kHz)
Aerial input	Coax F-Connector 75 Ω	Ferrite antenna	Ferrite antenna
IF	10,7 MHz ± 25 kHz	450 kHz ± 1 kHz	450 kHz ± 1 kHz
Sensitivity Mono : 26dB S/N Stereo : 46dB S/N Search tuning	≤ 4 µV (2 µV typ.) ≤ 45 µV 7 µV typ.	3 mV/m (1,5 mV/m typ.) ≤ 6mV/m	≤ 6 mV/m ≤ 6mV/m
Distortion	≤3% (2% typ.) RF=1mV Δf=75kHz	≤5% (3% typ) RF=100mV/m m=80%	≤5% (3% typ) RF=100mV/m m=80%
Channel separation	≥26dB (30dB typ)	-	-
Image rejection ratio	30 dB (40 dB typ.)	27 dB (30 dB typ.)	40 dB (43 dB typ.)
-3 dB limiting point	≤ 5 µV (2 µV typ.)		

CD unit:

Have to be measured direct on internal connector 1300

Frequency response : 20 - 20.000 Hz ±2 dB
Output level : 2V ±3 dB
Signal/noise ratio : ≥90 dB
Distortion : ≤1% at 1 kHz
Channel difference : ≤2 dB at 1 kHz
Channel crosstalk : 50 dB max.
De emphasis : 0 or 15/50 µs switched automatically by subcode on the disc

Laser
Output power : ≤500 µW
Wave length : 780 nm ± 20 nm

Recorder part:

Tape speed : 4,76 cm/s ±2% in Normal Speed
: 8,5 cm/s ±12% in High Speed Dubbing
Wow & Flutter : ≤ 0,4%
Winding speed : ≤ 130 s for C60 cassette
Erase / Bias system : AC 88 kHz ± 4 kHz
RIF-shift : service solution on request
Distortion at 200 nWb/m : ≤ 5%
Channel difference at PB : ≤ 3dB
Channel difference overall : ≤ 3dB
Channel separation : ≥ 18dB at 1kHz
Track separation : ≥ 55dB at 1kHz

Phono part:

Power supply : 12V DC / 80mA
Wow & Flutter : 0,25% JIS
: 0,35% DIN
Operating speed : 33⅓ and 45 rpm
Drive system : Belt drive with automatic return

	IEC I	IEC I (dubbing)	IEC II	IEC II (dubbing)
Frequency response -8 dB[1)]	100Hz - 12,5kHz	100Hz - 12,5kHz	100Hz - 12,5kHz	100Hz - 12,5kHz
Signal to Hiss ratio[2)] A-weighted	≥ 45 dB	≥ 45 dB	≥ 45 dB	≥ 45 dB
Signal to Noise ratio[2)] FF-weighted	≥ 40 dB	≥ 40 dB	≥ 40 dB	≥ 40 dB
Erase attenuation [3)]	≥ 55 dB	≥ 55 dB	≥ 55 dB	≥ 55 dB

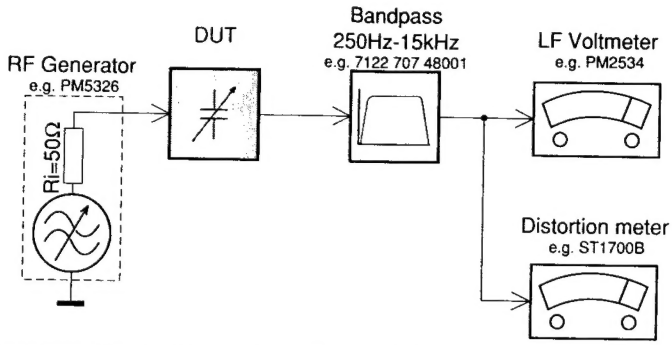
[1)] typical value [2)] at 250 nWb/m [3)] Use a 1 kHz passfilter to minimize the wide band noise component.

The set reacts on following RC5 commands:

	Systemcode	Commandcode
Stand by	17,20,21	12
Tuner	17	63
Aux/Phono	21	63
CD	20	63
Volume up	16	16
Volume down	16	17
Repeat	20	29
Shuffle	20	28
Scan	20	43
Play (CD)	20	53
Pause (CD)	20	48
Next (CD)	20	32
Previous (CD)	20	33
Search Forward (CD)	20	52
Search Backward (CD)	20	50
Stop (CD)	20	54
Tuning up	17	30
Tuning down	17	31
Preset up	17	32
Preset down	17	33

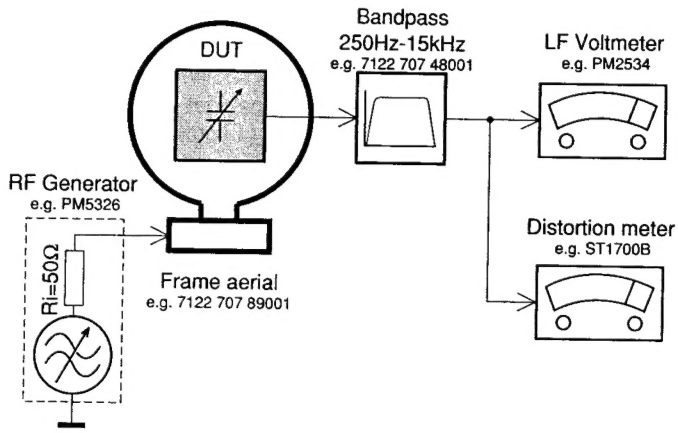
Measurement setup

Tuner FM



Use a bandpass filter to eliminate hum (50Hz, 100Hz) and disturbance from the pilottone (19kHz, 38kHz).

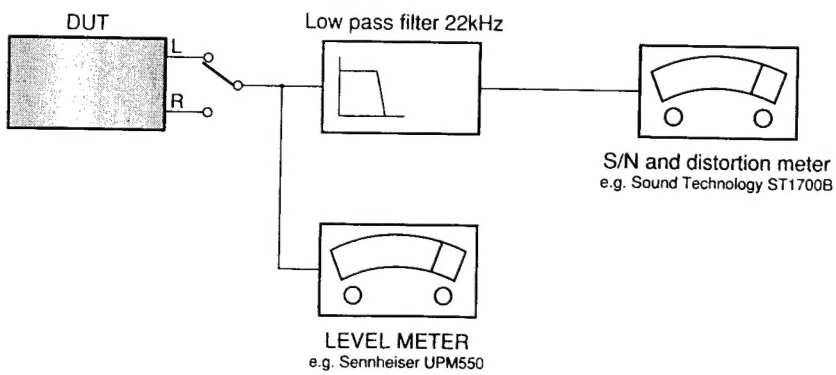
Tuner AM (MW,LW)



To avoid atmospheric interference all AM-measurements have to be carried out in a Faraday´s cage.
Use a bandpass filter (or at least a high pass filter with 250Hz) to eliminate hum (50Hz, 100Hz).

CD

Use Audio Signal Disc SBC429 4822 397 30184 (replaces test disc 3)
L.P.F. = 13th order filter 4822 395 30204



DUT ..... **D**evice **U**nder **T**est

SERVICE HINTS

Service tools

TORX screwdriver set SBC 163 ..... 4822 395 50145
Audio signal disc SBC 429 ..... 4822 397 30184

Test disc 5 (disc without errors)
Test disc 5A (disc with dropout errors, black spots and finger prints)
Test disc 5 and **Test disc 5A** = SBC 426/426A 4822 397 30096

Burn in test disc (65 min. 1kHz signal at -30dB level without "pause") 4822 397 30155
Universal **test cassette Fe** SBC 420 ..... 4822 397 30071
Universal **test cassette CrO_2** SBC 419 ..... 4822 397 30069

Dismantling of:

3rick :see page 54

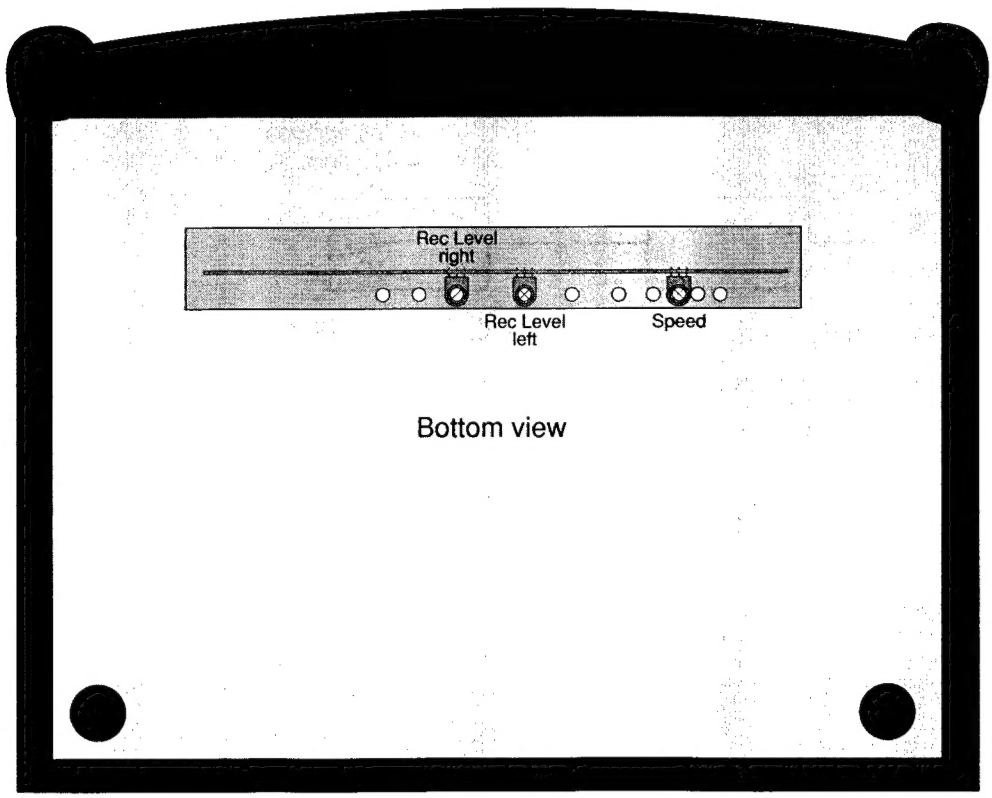
Front assy
* Remove top cover as shown in picture 1.
* Remove right side of the cabinet (10 screws).
* Remove 3 bottom screws and 3 screws from left side wall on front side.
* Remove 1 screw to CD metal support on rear.
* Release 2 snaps (bottom-front) and turn whole front assy aside.

Tape Transports
* Separate Front assy as described above.
* Loosen Recorder assy (6 screws).

Power Board
* Remove top cover as shown in picture 1.
* Remove rear part of cabinet (20 screws).
* Loosen power board (4 screws).
* Take power board and place it behind the set.

Remarks: Cable to headphone socket has to be disconnected.
Remove CD brick if necessary.

Playback,- Rec/Pb Head
* Dismantle Cassette door as discribed in picture 3 and 4.
* Press PLAY.
* Replace the head.
* Adjustment of Tape speed and Recording level can be done from the botom side (see picture below).



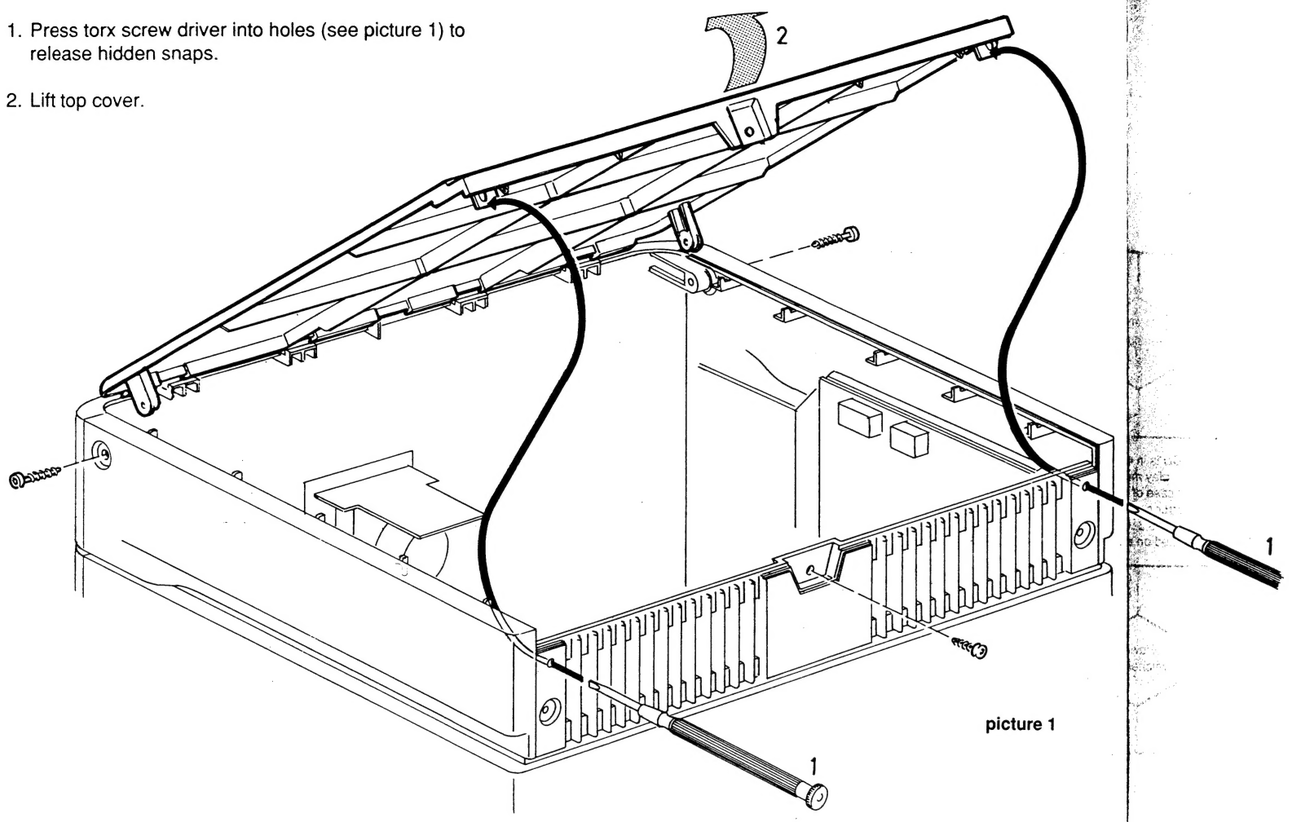
Bottom view

Dismantling Hints

Dismantling of Top Cover

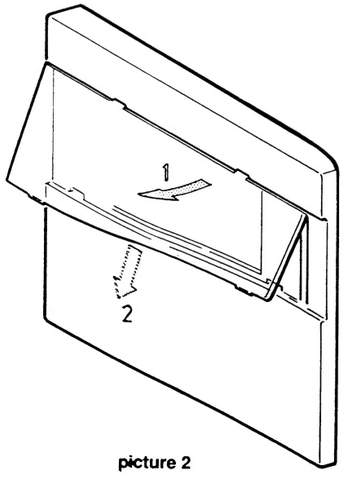
Remove 3x screws.

1. Press torx screw driver into holes (see picture 1) to release hidden snaps.
2. Lift top cover.



picture 1

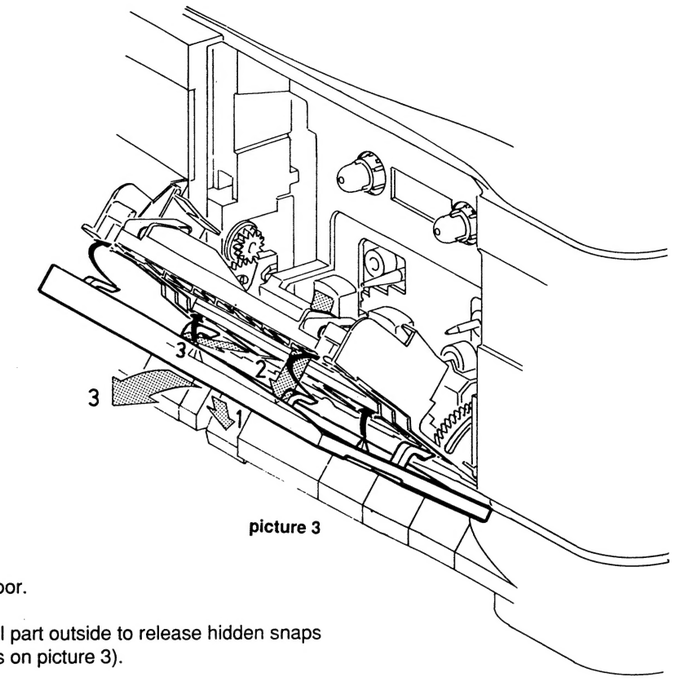
Dismantling Window of Cassette Door



picture 2

1) Press the window outside as shown in picture 2. You don´t need any tool.

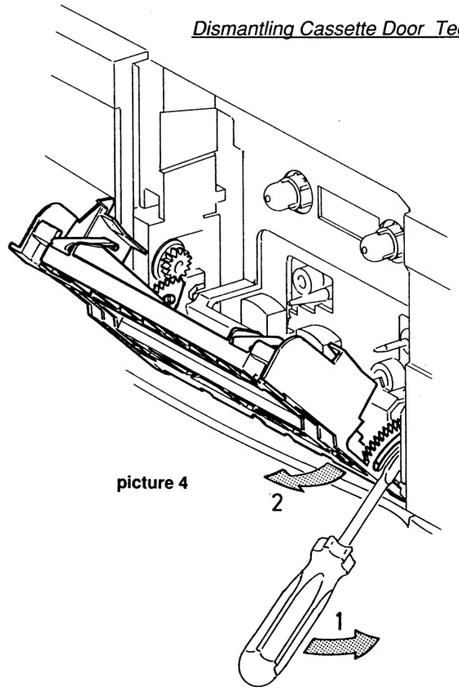
Dismantling Cassette Door Ornamental Part



picture 3

1) Open cassette door.
2) Press ornamental part outside to release hidden snaps (see black arrows on picture 3).
3) Pull ornamental part upwards.

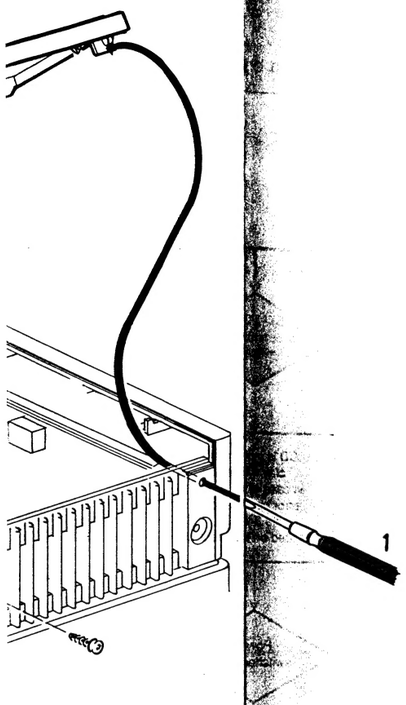
Dismantling Cassette Door Technical Part



picture 4

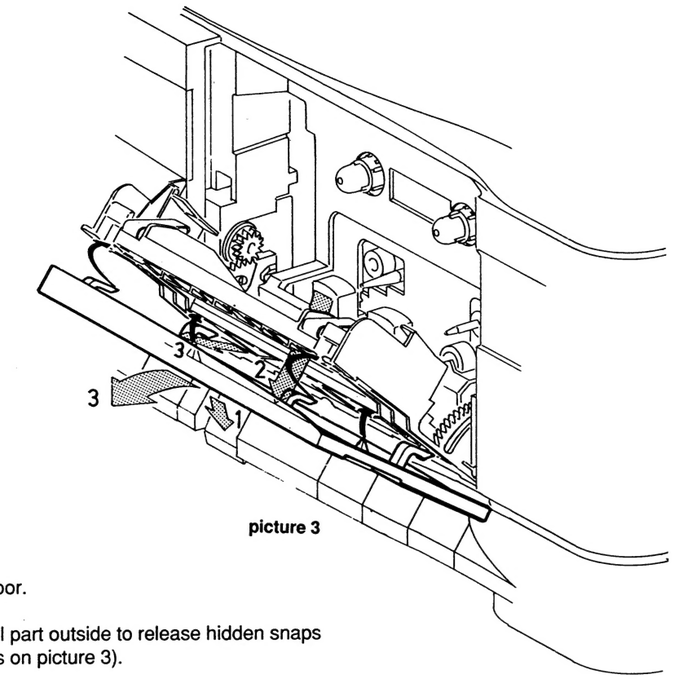
Remove ornamental part first.

1) Bend tooth segment with a screw driver to release snap as shown in picture 4.
2) Pull cassette door outside.



picture 1

Dismantling Cassette Door Ornamental Part



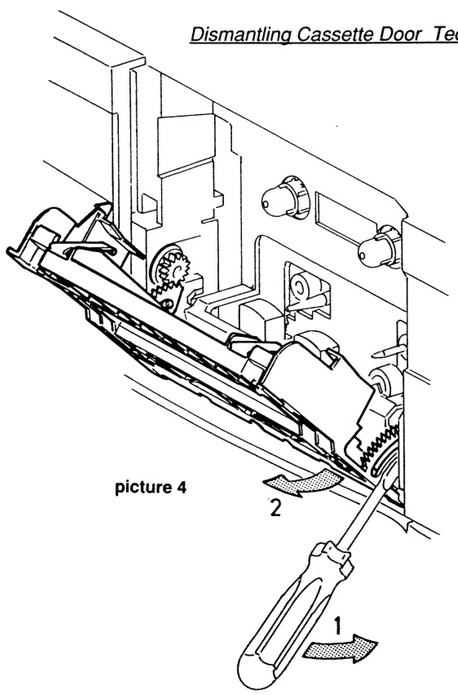
picture 3

1) Open cassette door.

2) Press ornamental part outside to release hidden snaps (see black arrows on picture 3).

3) Pull ornamental part upwards.

Dismantling Cassette Door Technical Part



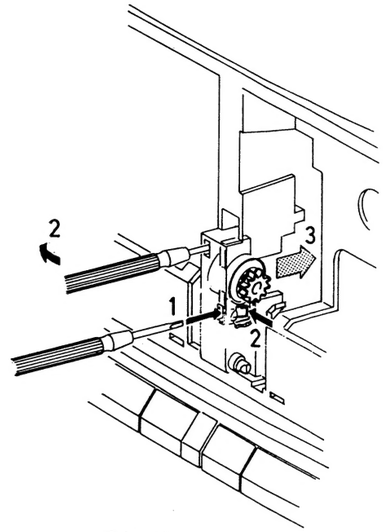
picture 4

Remove ornamental part first.

1) Bend tooth segment with a screw driver to release snap as shown in picture 4.

2) Pull cassette door outside.

Dismantling of Damper



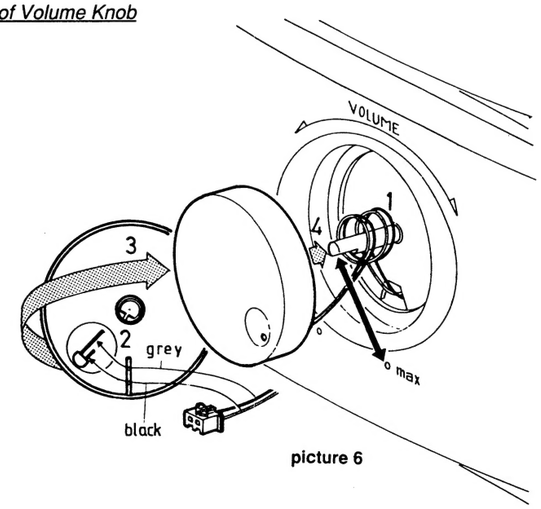
picture 5

Remove Tape Transports and bracket (506) first.

1+2) Release two snaps as shown in picture 5.

3) Pull damper outside.

Mounting of Volume Knob



picture 6

1) Turn Volume pot to max. (clockwise)

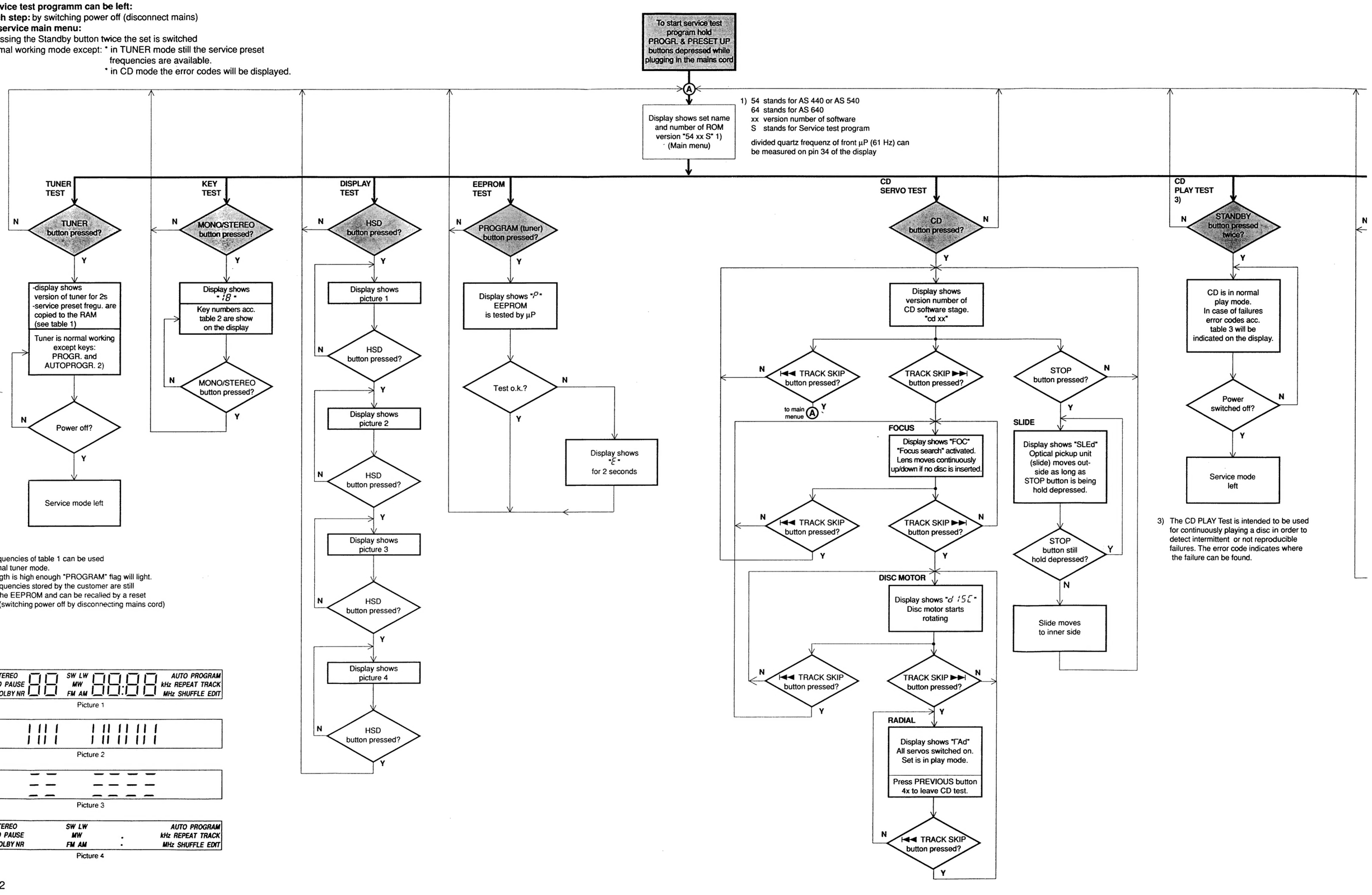
2) Pay attention to the polarity of the LED.

3) Turn the cable two times clockwise onto the axle.

4) Insert the knob.

SERVICE TEST PROGRAM

The service test programm can be left:
– **at each step:** by switching power off (disconnect mains)
– **from service main menu:**
by pressing the Standby button twice the set is switched to normal working mode except: * in TUNER mode still the service preset frequencies are available.
* in CD mode the error codes will be displayed.



2) Preset frequencies of table 1 can be used as in normal tuner mode.
If fieldstregth is high enough "PROGRAM" flag will light.
Preset frequencies stored by the customer are still stored in the EEPROM and can be recalled by a reset of the µP (switching power off by disconnecting mains cord)

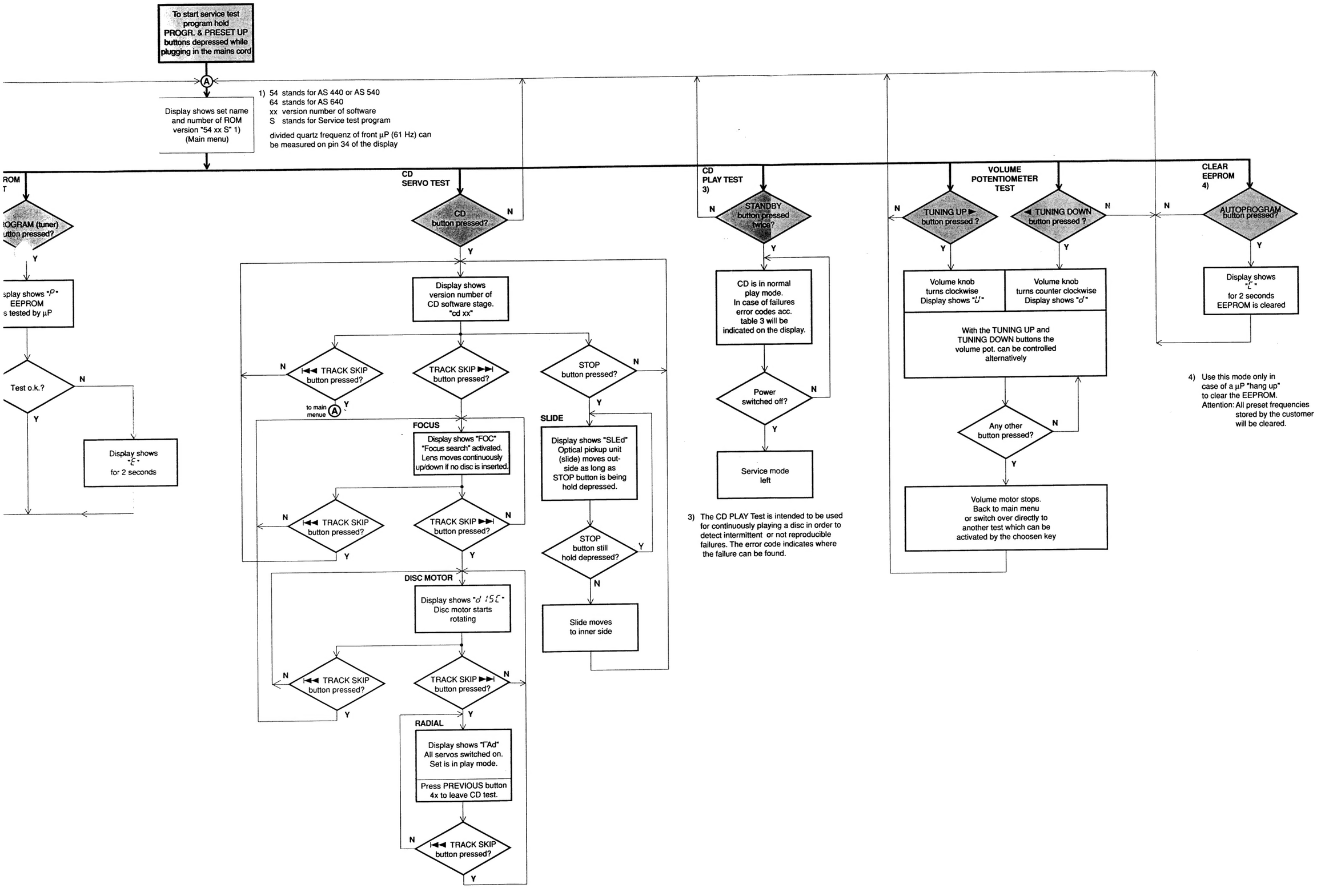
Picture 1

Picture 2

Picture 3

Picture 4

3) The CD PLAY Test is intended to be used for continuously playing a disc in order to detect intermittent or not reproducible failures. The error code indicates where the failure can be found.


To start service test program hold PROGR. & PRESET UP buttons depressed while plugging in the mains cord
A
Display shows set name and number of ROM version "54 xx S" 1) (Main menu)
1) 54 stands for AS 440 or AS 540
64 stands for AS 640
xx version number of software
S stands for Service test program
divided quartz frequenz of front µP (61 Hz) can be measured on pin 34 of the display
ROM T
OGRAM (tuner) utton pressed?
Y
splay shows "P" EEPROM s tested by µP
Test o.k.?
N
Y
Display shows "E" for 2 seconds
CD SERVO TEST
CD button pressed?
N
Y
Display shows version number of CD software stage. "cd xx"
TRACK SKIP button pressed?
TRACK SKIP button pressed?
STOP button pressed?
N
Y
to main menue
A
FOCUS
Display shows "FOC" "Focus search" activated. Lens moves continuously up/down if no disc is inserted.
TRACK SKIP button pressed?
TRACK SKIP button pressed?
DISC MOTOR
Display shows "d 15C" Disc motor starts rotating
TRACK SKIP button pressed?
TRACK SKIP button pressed?
RADIAL
Display shows "TAd" All servos switched on. Set is in play mode.
Press PREVIOUS button 4x to leave CD test.
TRACK SKIP button pressed?
SLIDE
Display shows "SLEd" Optical pickup unit (slide) moves out-side as long as STOP button is being hold depressed.
STOP button still hold depressed?
Slide moves to inner side
CD PLAY TEST 3)
STANDBY button pressed twice?
CD is in normal play mode. In case of failures error codes acc. table 3 will be indicated on the display.
Power switched off?
Service mode left
3) The CD PLAY Test is intended to be used for continuously playing a disc in order to detect intermittent or not reproducible failures. The error code indicates where the failure can be found.
VOLUME POTENTIOMETER TEST
TUNING UP ► button pressed ?
◄ TUNING DOWN button pressed ?
Volume knob turns clockwise Display shows "U"
Volume knob turns counter clockwise Display shows "d"
With the TUNING UP and TUNING DOWN buttons the volume pot. can be controlled alternatively
Any other button pressed?
Volume motor stops. Back to main menu or switch over directly to another test which can be activated by the choosen key
CLEAR EEPROM 4)
AUTOPROGRAM button pressed?
Display shows "C" for 2 seconds EEPROM is cleared
4) Use this mode only in case of a µP "hang up" to clear the EEPROM.
Attention: All preset frequencies stored by the customer will be cleared.

	VERSION						
	EUR	EAS	USA	EUS	OSE	OSS	
PRESET	Europe 3-band	East Europe 3-band	USA 2-band	Europe 4-band	Oversea 2-band	Oversea 3-band	UNIT
1	87,5	65,81	87,5	87,5	87,5	87,5	MHz
2	108	74	108	108	108	108	MHz
3	98	87,5	98	98	98	98	MHz
4	89,7	108	89,7	89,7	89,7	89,7	MHz
5	93	98	93	93	93	93	MHz
6	104,9	89,7	104,9	104,9	104,9	104,9	MHz
7	522	93	530	522	530	530	kHz
8	1611	104,9	1710	1611	1710	1710	kHz
9	540	522	540	540	540	540	kHz
10	549	1611	550	549	550	550	kHz
11	558	540	560	558	560	560	kHz
12	1494	549	1500	1494	1500	1500	kHz
13	153	558	1600	153	1600	1600	kHz
14	279	1494	1000	279	1000	3900	kHz
15	156	153		156		12100	kHz
16	198	279		198		4250	kHz
17	270	156		270		8000	kHz
18	999	198		5900		11900	kHz
19		270		18100		1000	kHz
20		999		6200			kHz
21				17000			kHz
22				12000			kHz
23				999			kHz

table 1

Key activated	Display shows	Key activated	Display shows
Tuning up	01	Autoprogram	17
Tuning down	03	Mono / Stereo	18
Preset up	04	Tuner	19
Preset down	02	Stand by	20
Dolby [1]	05	Tape	21
Band	06	Phono / Aux	22
Program(Tuner)	07	CD	23
Fe/Cr [1]	08	—	—
Introscan	09	Repeat	25
Pause (CD)	10	Shuffle	26
≪ Track skip	11	Review	27
Track skip ≫	12	Clear	28
HS dubbing	13	—	—
Open/Close	14	Edit [1]	30
Stop (CD)	15	—	—
Play (CD)	16	Program (CD)	32

table 2

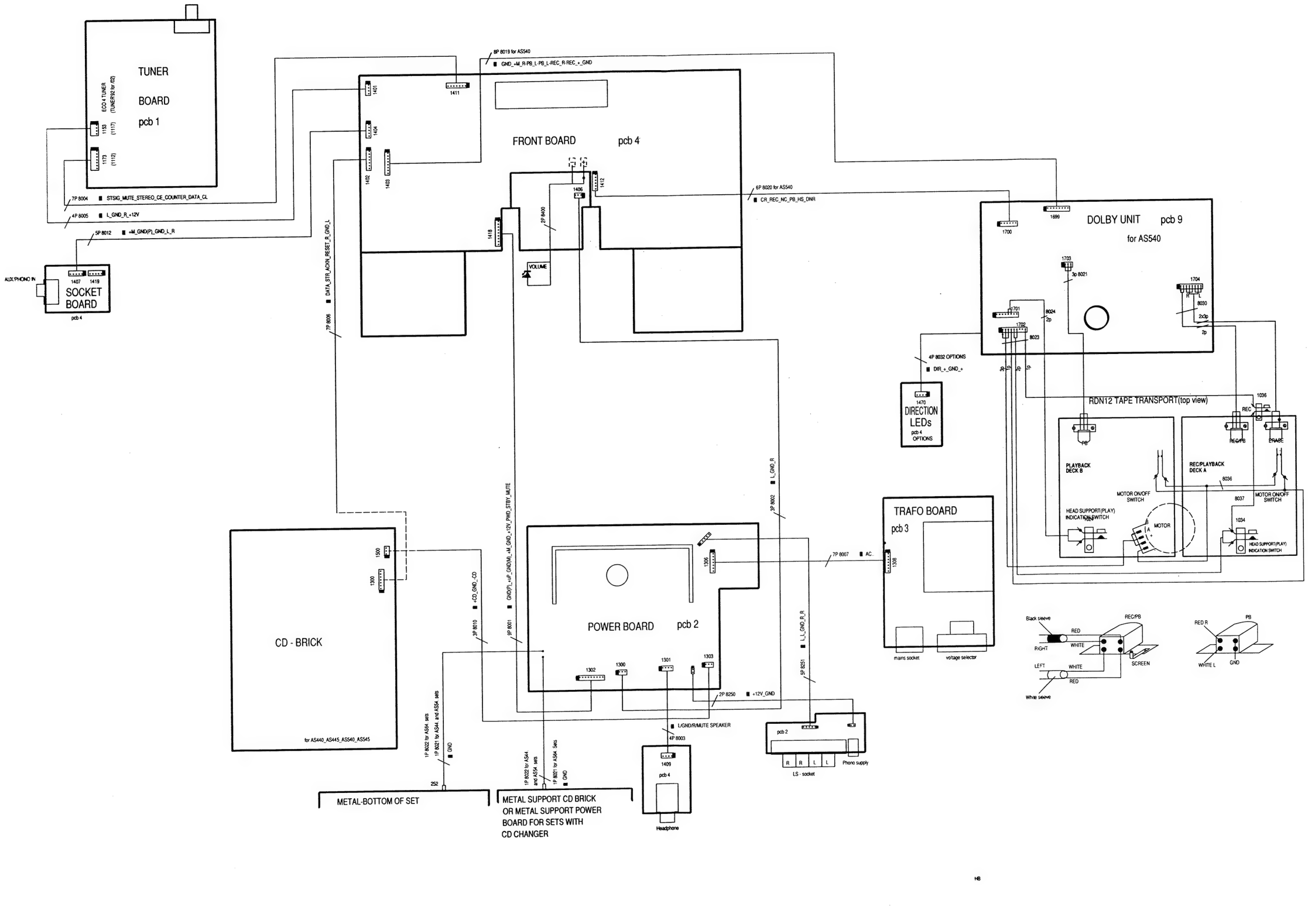
If a key is activated at the remote control ⌐ ⌙ is shown additionally to the key number as long as the key is hold depressed.

1) key not available in all versions.

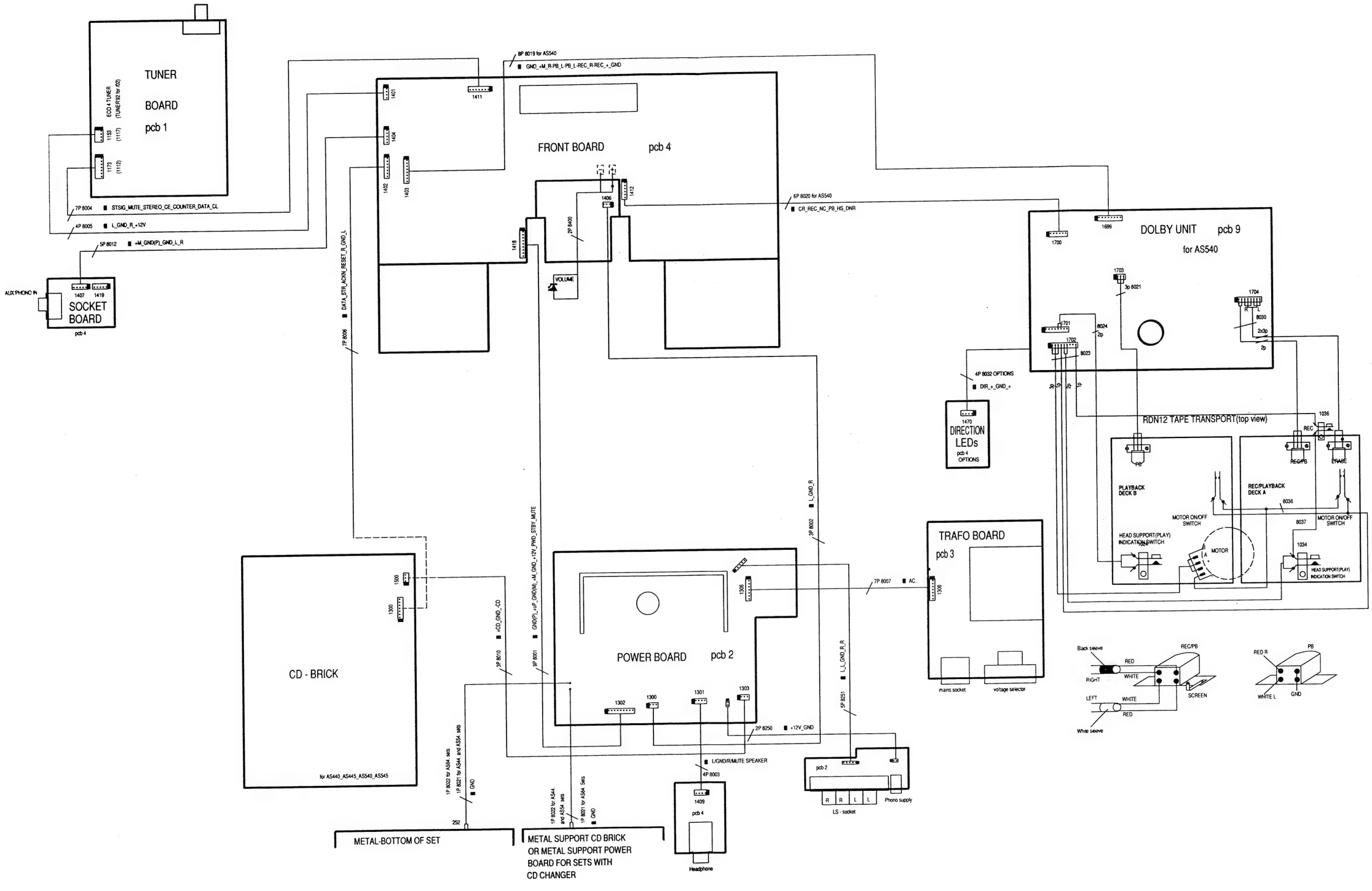
Error code shown on the display	Description
Er 1002	Focus error
Er 1007	Subcode error, no valid subcode
Er 1008	TOC error, out of lead-in area while reading TOC
Er 1009	CD4 + decoder error
Er 1010	Radial error
Er 1012	Fatal sledge error
Er 1013	Turntable motor error
Er 1030	Too many grooves to jump
Er 1031	Search error
Er 1032	Search binary error
Er 1033	Search index error
Er 1034	Search time error
Er 1037	Selector error
Er 1050	Edit calculation error
Er 1051	Edit track count error
Er 1052	Edit Optimal error

table 3

WIRING DIAGRAM

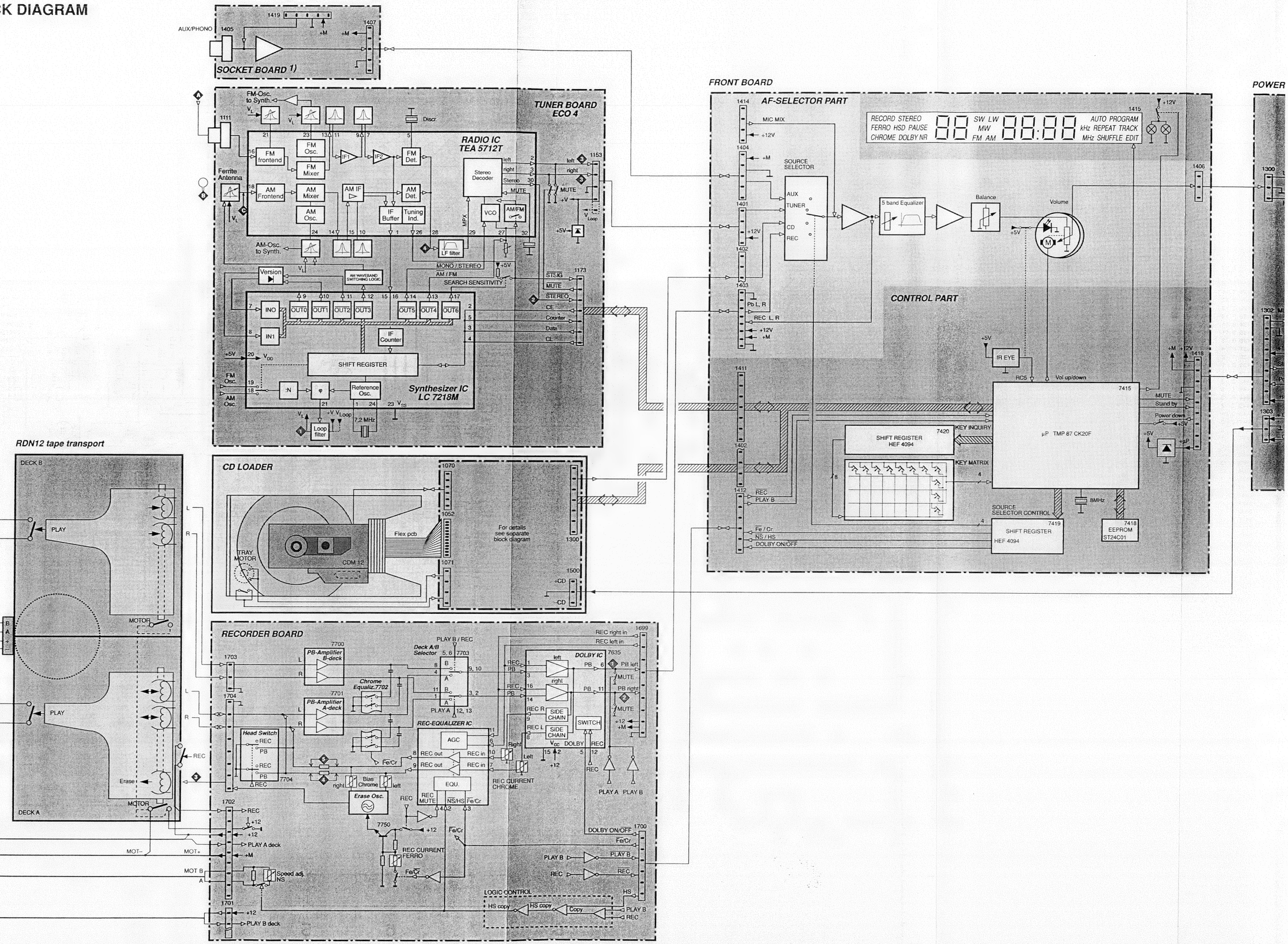


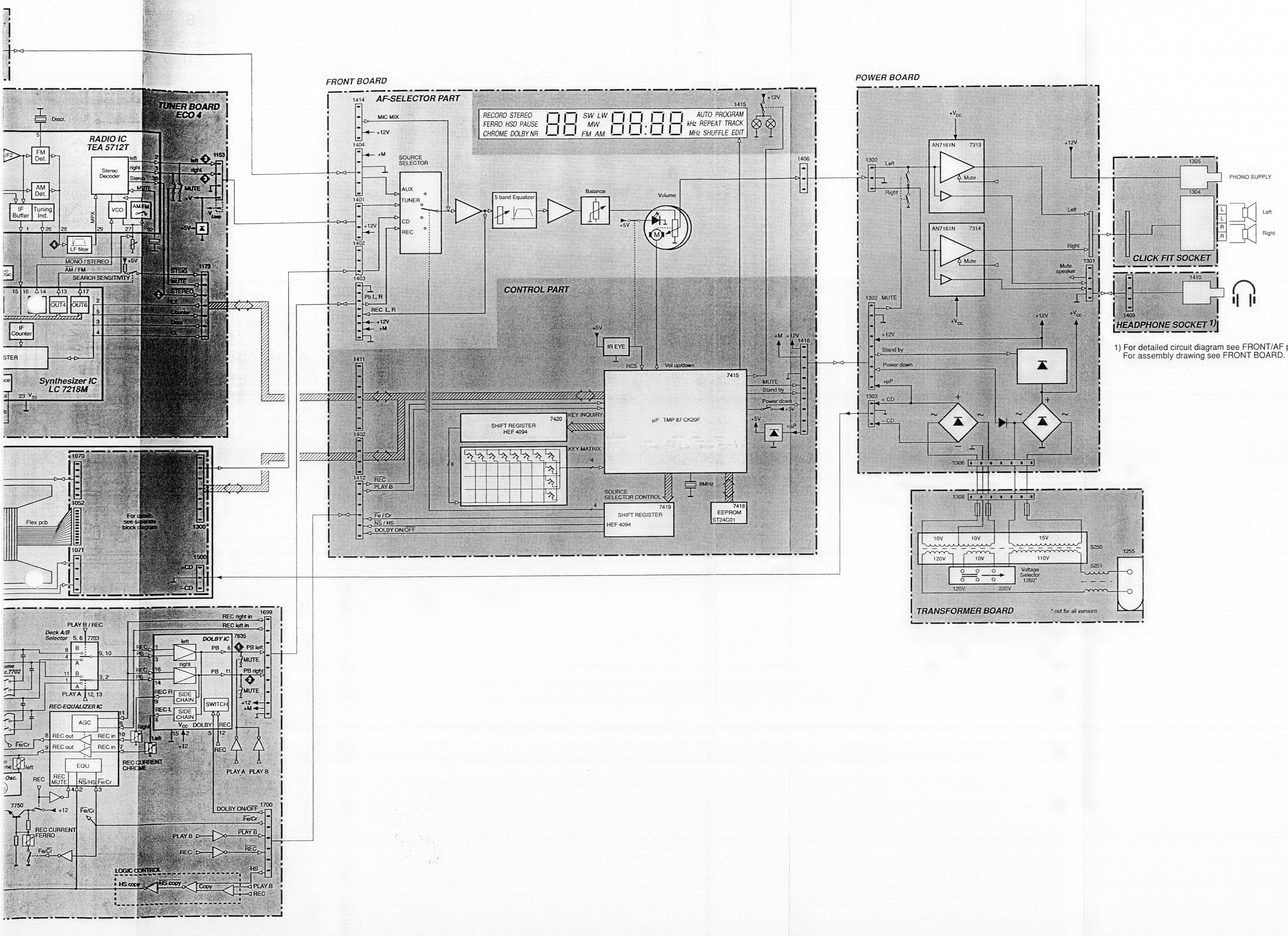
WIRING DIAGRAM



HB

APPARATUS BLOCK DIAGRAM




TUNER BOARD ECO 4
RADIO IC TEA 5712T
Discr.
FM Det.
AM Det.
Stereo Decoder
IF Buffer
Tuning Ind.
VCO
AM/FM
LF filter
MONO / STEREO
AM / FM
SEARCH SENSITIVITY
IF Counter
Synthesizer IC LC 7218M
1153
1173
FRONT BOARD
AF-SELECTOR PART
MIC MIX
SOURCE SELECTOR
AUX
TUNER
CD
REC
5 band Equalizer
Balance
Volume
RECORD STEREO
FERRO HSD PAUSE
CHROME DOLBY NR
SW LW
MW
FM AM
AUTO PROGRAM
kHz REPEAT TRACK
MHz SHUFFLE EDIT
CONTROL PART
IR EYE
RCS
Vol up/down
μP TMP 87 CK20F
SHIFT REGISTER HEF 4094
KEY INQUIRY
KEY MATRIX
SOURCE SELECTOR CONTROL
SHIFT REGISTER HEF 4094
EEPROM ST24C01
8MHz
REC
PLAY B
Fe / Cr
NS / HS
DOLBY ON/OFF
POWER BOARD
AN7161N 7313
AN7161N 7314
Mute
Left
Right
Mute speaker
Stand by
Power down
+μP
+CD
−CD
PHONO SUPPLY
CLICK FIT SOCKET
HEADPHONE SOCKET 1)
1) For detailed circuit diagram see FRONT/AF part.
For assembly drawing see FRONT BOARD.
Flex pcb
For cable see separate block diagram
TRANSFORMER BOARD
* not for all versions
Voltage Selector 1260*
REC-EQUALIZER IC
PLAY B / REC
PLAY A
Deck A/B Selector
DOLBY IC
SIDE CHAIN
SWITCH
AGC
EQU
REC CURRENT CHROME
REC CURRENT FERRO
LOGIC CONTROL
HS copy
Copy
DOLBY ON/OFF

0002	A	9	2464	E	3	3482	D	12	3656	F	7
0003	A	9	2465	F	8	3483	D	12	3657	C	9
0004	A	9	2466	C	13	3484	D	11	3658	B	5
0005	D	7	2468	C	1	3485	D	11	5401	B	7
1401	A	1	2469	H	9	3486	E	3	5402	B	5
1402	C	1	2470	I	9	3487	E	4	5405	E	3
1403	C	1	2471	H	8	3488	E	3	6401	D	2
1404	B	1	2472	I	8	3489	E	2	6402	C	3
1406	E	8	2473	I	9	3490	E	1	6403	D	3
1407	H	9	2475	A	2	3491	F	8	6404	C	3
1408	I	8	2476	F	12	3492	F	7	6405	D	4
1409	I	5	2477	I	10	3493	E	7	6406	C	2
1410	I	6	2483	E	3	3494	E	7	6407	D	3
1411	A	4	2484	F	3	3495	E	8	6408	C	3
1412	D	9	2485	A	9	3496	E	8	6409	D	3
1414	F	1	2502	E	5	3497	E	6	6410	C	3
1415	A	5	2503	D	5	3498	E	6	6411	D	4
1416	B	6	2504	B	6	3499	B	8	6412	C	2
1417	B	7	2505	A	11	3500	A	4	6413	D	3
1418	F	5	2507	B	12	3501	C	9	6414	C	3
1419	H	10	2510	A	4	3502	C	9	6415	D	2
1420	F	11	2512	E	5	3503	A	11	6416	C	4
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1422	B	12	2514	C	4	3505	A	12	6419	B	12
1423	F	12	2552	I	9	3506	C	5	6420	F	12
1424	I	12	2553	I	9	3507	B	4	6421	F	12
1425	A	13	2554	I	5	3508	B	4	6422	C	11
1426	A	12	2555	I	5	3516	A	3	6423	C	11
1427	I	10	2556	D	13	3517	A	3	6424	C	11
1428	I	13	2557	D	13	3526	D	5	6425	C	11
1429	I	10	2558	C	12	3528	B	2	6427	A	12
1430	I	11	3401	A	1	3530	A	3	6428	C	9
1431	I	12	3402	A	1	3531	A	3	6431	F	5
1432	I	13	3403	A	1	3532	A	3	6442	D	2
1433	F	10	3404	A	1	3533	A	3	6450	C	9
1434	B	11	3405	C	1	3534	A	3	6453	F	7
1435	B	11	3406	C	1	3535	A	3	7403	C	12
1436	B	3	3407	C	1	3536	A	2	7406	F	6
1437	F	4	3408	C	1	3537	B	4	7407	E	2
1438	F	2	3409	D	2	3538	B	4	7408	F	8
1439	E	1	3410	D	2	3539	A	4	7409	F	7
1440	F	1	3411	D	2	3540	E	6	7410	F	7
1442	I	3	3412	D	2	3552	F	4	7411	F	7
1443	I	3	3413	B	1	3554	A	13	7412	F	6
1444	F	3	3414	B	1	3555	A	12	7413	F	8
1445	I	2	3415	I	9	3556	A	13	7418	C	4
1446	I	1	3416	I	8	3557	A	13	7419	E	4
1447	I	2	3417	D	3	3558	B	11	7420	B	11
1448	B	3	3418	C	3	3559	B	11	7421	D	5
1475	I	1	3419	D	4	3560	B	11	7422	B	1
2401	A	2	3420	C	2	3562	D	5	7423	D	9
2402	A	2	3421	D	3	3563	D	5	7424	D	9
2403	D	3	3422	C	3	3564	A	11	7425	E	5
2404	B	2	3423	D	2	3565	A	2	7426	A	11
2405	D	4	3424	C	3	3568	B	9	7427	D	5
2406	B	2	3425	D	4	3569	B	9	7430	D	9
2407	D	2	3426	C	4	3570	E	9	7445	C	2
2408	B	2	3427	F	2	3571	D	10	7446	C	2
2409	C	2	3428	F	2	3572	A	11	7447	I	9
2410	B	3	3431	F	2	3585	B	4	7448	I	9
2411	C	3	3432	F	3	3586	C	5	8400	D	7
2412	B	2	3433	F	1	3587	F	5			
2413	C	4	3434	F	2	3589	B	11			
2414	B	2	3435	E	2	3590	D	4			
2415	C	3	3436	E	3	3591	B	11			
2416	B	3	3437	D	2	3592	D	4			
2417	C	4	3438	D	2	3593	B	11			
2418	B	3	3439	D	12	3594	B	5			
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2421	E	2	3442	D	13	3597	B	5			
2422	E	3	3443	D	13	3598	A	2			
2425	F	2	3444	D	13	3601	E	2			
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2433	D	12	3452	D	11	3609	E	2			
2434	D	13	3455	E	10	3610	D	10			
2435	E	12	3456	E	11	3612	B	5			
2436	E	12	3457	E	11	3613	C	7			
2437	D	12	3458	E	11	3615	A	2			
2438	D	12	3459	E	12	3616	E	7			
2439	E	11	3460	E	12	3617	G	7			
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2453	D	13	3474	D	13	3654	I	8			
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2455	C	11	3476	E	3	3660	I	9			
2456	C	12	3477	F	8	3661	I	9			
2460	D	3	3478	F	7	3662	C	10			
2461	D	3	3479	F	13	3663	C	10			
2462	D	4	3480	D	7	3664	E	7			
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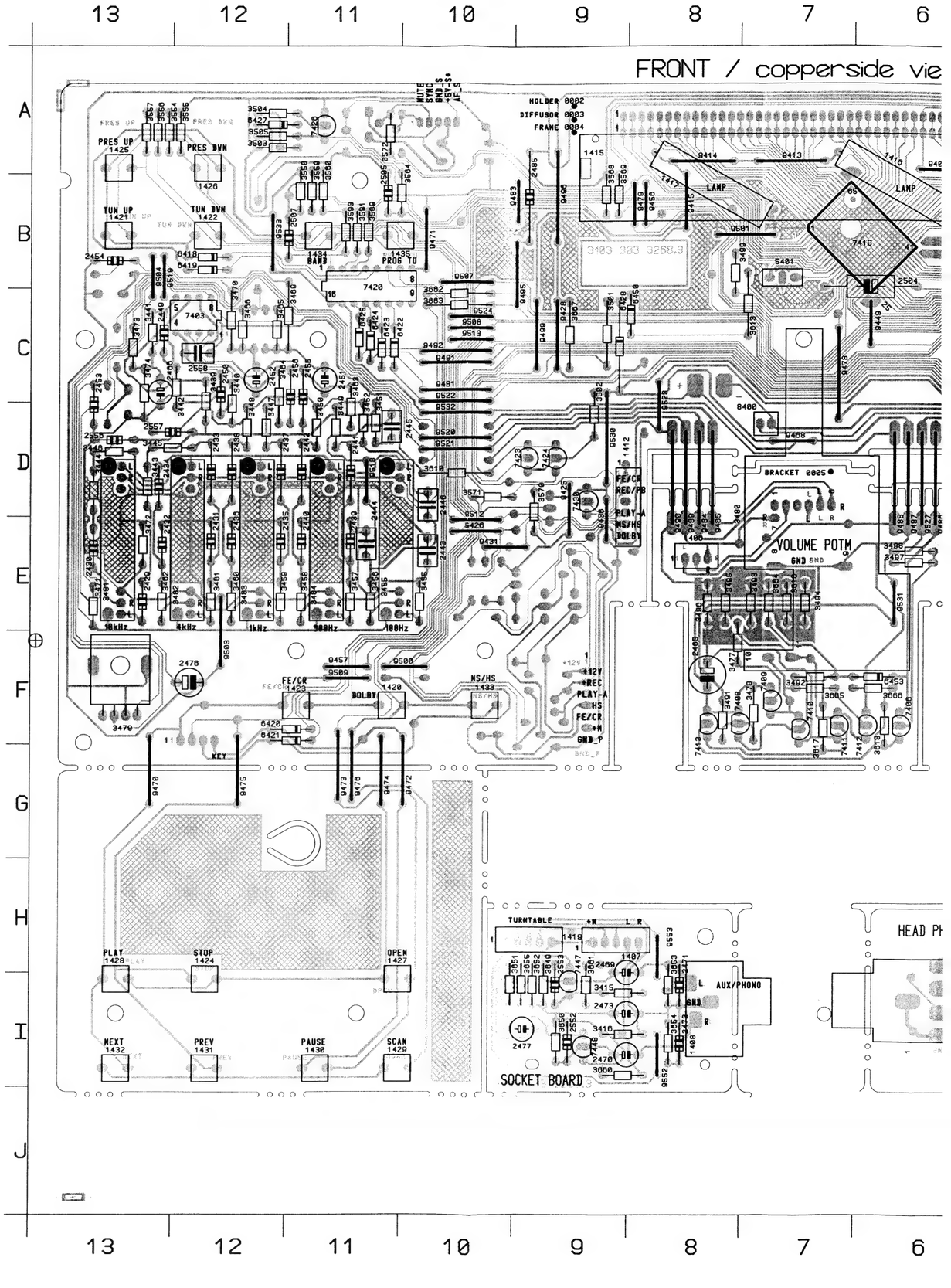
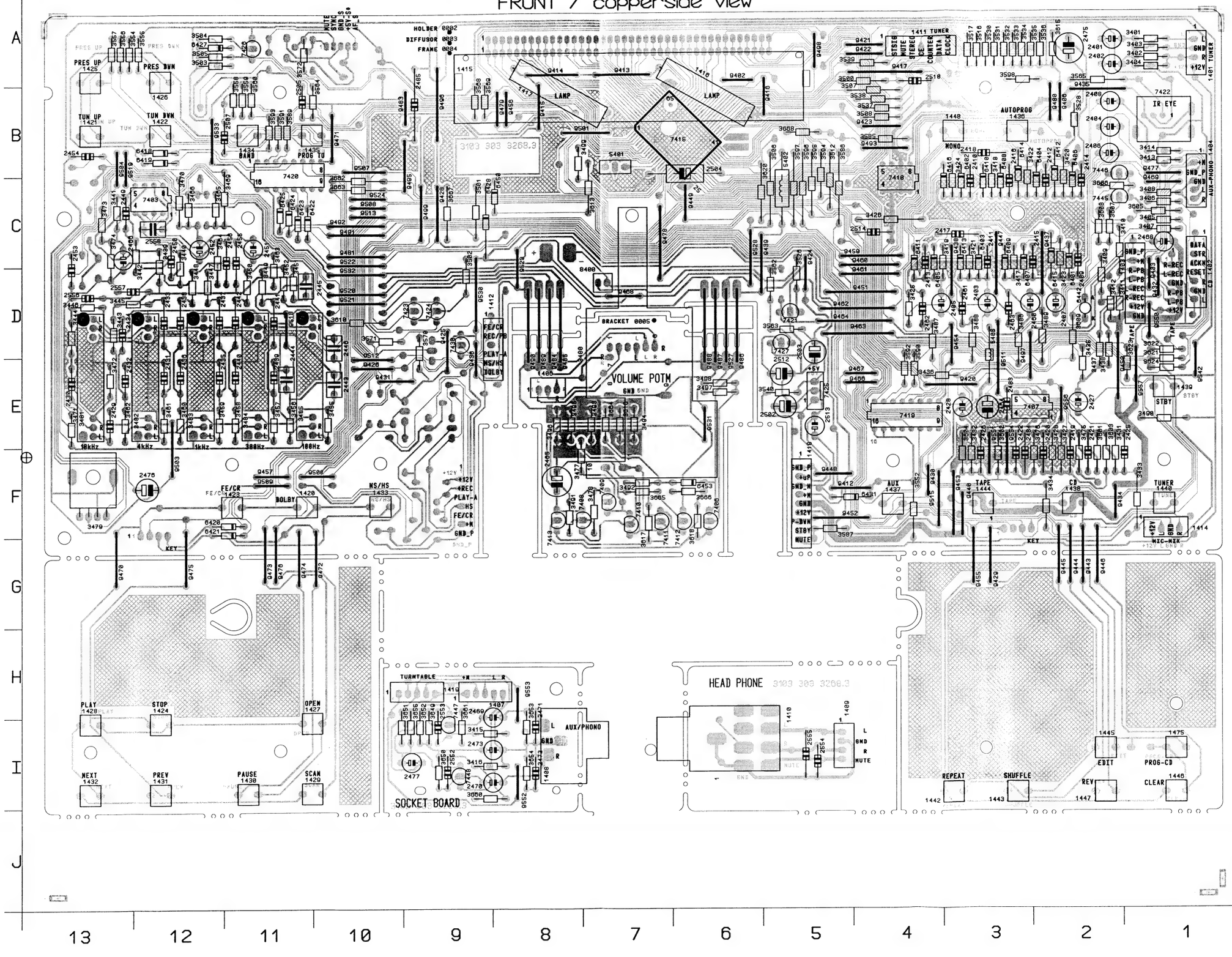


FRONT / copperside view



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0004	A	9	2466	C	13	3484	D	11	3668	B	5
0005	D	7	2468	C	1	3485	D	11	5401	B	7
1401	A	1	2469	H	9	3486	E	3	5402	B	5
1402	C	1	2470	I	9	3487	E	4	5405	E	3
1403	C	1	2471	H	8	3488	E	3	6401	D	2
1404	B	1	2472	I	8	3489	E	2	6402	C	3
1405	E	8	2473	I	9	3490	E	1	6403	D	3
1407	H	9	2475	A	2	3491	F	8	6404	C	3
1408	I	8	2476	F	12	3492	F	7	6405	D	4
1409	I	5	2477	I	8	3493	E	7	6406	C	2
1410	I	6	2483	E	3	3494	E	7	6407	D	3
1411	A	4	2484	F	3	3495	E	8	6408	C	3
1412	D	9	2485	A	9	3496	E	8	6409	D	3
1414	F	1	2502	E	5	3497	E	6	6410	C	3
1415	A	5	2503	D	5	3498	E	6	6411	D	4
1416	B	6	2504	B	6	3499	B	8	6412	C	2
1417	B	7	2505	A	11	3500	A	4	6413	D	3
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1425	A	13	2554	I	5	3508	B	4	6422	C	11
1426	A	12	2555	I	5	3516	A	3	6423	C	11
1427	I	10	2556	D	13	3517	A	3	6424	C	11
1428	I	13	2557	D	13	3526	B	5	6425	C	11
1429	I	10	2558	C	12	3528	B	2	6427	A	12
1430	I	11	3401	A	1	3530	A	3	6428	C	9
1431	I	12	3402	A	1	3531	A	3	6431	F	5
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1436	B	3	3407	C	1	3536	A	2	7406	F	6
1437	F	4	3408	C	1	3537	B	4	7407	E	2
1438	F	2	3409	D	2	3538	B	4	7408	F	8
1439	E	1	3410	D	2	3539	A	4	7409	F	7
1440	F	1	3411	D	2	3548	E	6	7410	F	7
1442	I	3	3412	D	2	3552	F	4	7411	F	7
1443	I	3	3413	B	1	3554	A	13	7412	F	6
1444	F	3	3414	B	1	3555	A	12	7413	F	8
1445	I	2	3415	I	9	3556	A	13	7418	C	4
1446	I	1	3416	I	8	3557	A	13	7419	E	4
1447	I	2	3417	D	3	3558	B	11	7420	B	11
1448	B	3	3418	C	3	3559	B	11	7421	D	5
1475	I	1	3419	D	4	3560	B	11	7422	B	1
2401	A	2	3420	C	2	3562	B	5	7423	D	9
2402	A	2	3421	D	3	3563	B	5	7424	D	9
2403	D	3	3422	C	3	3564	A	11	7425	E	5
2404	B	2	3423	D	2	3565	A	2	7426	A	11
2405	D	4	3424	C	3	3568	B	9	7427	D	5
2406	B	2	3425	D	4	3569	B	9	7430	D	9
2407	D	2	3426	C	4	3570	E	9	7445	C	2
2408	B	2	3427	F	2	3571	B	10	7446	C	2
2409	C	2	3428	F	2	3572	A	11	7447	I	9
2410	B	3	3431	F	2	3585	B	4	7448	I	9
2411	C	3	3432	F	3	3586	C	5	8400	D	7
2412	B	2	3433	F	1	3587	F	5			
2413	C	4	3434	F	2	3588	B	11			
2414	B	2	3435	E	2	3590	B	4			
2415	C	3	3436	E	3	3591	B	11			
2416	B	3	3437	D	2	3592	B	4			
2417	C	4	3438	D	2	3593	B	11			
2418	B	3	3439	D	12	3594	B	5			
2419	F	2	3440	D	12	3595	B	5			
2420	F	2	3441	C	13	3596	B	5			
2421	E	2	3442	D	13	3597	B	5			
2422	E	3	3443	D	13	3598	A	2			
2425	F	2	3444	D	13	3601	E	2			
2426	F	3	3445	D	12	3602	F	3			
2427	E	2	3446	D	13	3603	E	2			
2428	E	3	3447	D	12	3604	E	3			
2429	E	13	3448	D	12	3605	C	1			
2430	E	13	3449	D	11	3606	C	1			
2431	E	12	3450	D	11	3607	C	2			
2432	E	13	3451	D	11	3608	C	2			
2433	D	12	3452	D	11	3609	E	2			
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2438	D	12	3459	E	12	3614	E	7			
2439	E	11	3460	E	12	3615	B	7			
2440	E	11	3461	E	12	3616	B	6			
2441	D	11	3462	E	13	3617	B	6			
2442	D	11	3463	C	11	3618	E	1			
2443	E	10	3464	D	12	3619	J	1			
2444	E	11	3465	C	12	3620	E	2			
2445	D	11	3466	C	12	3624	E	1			
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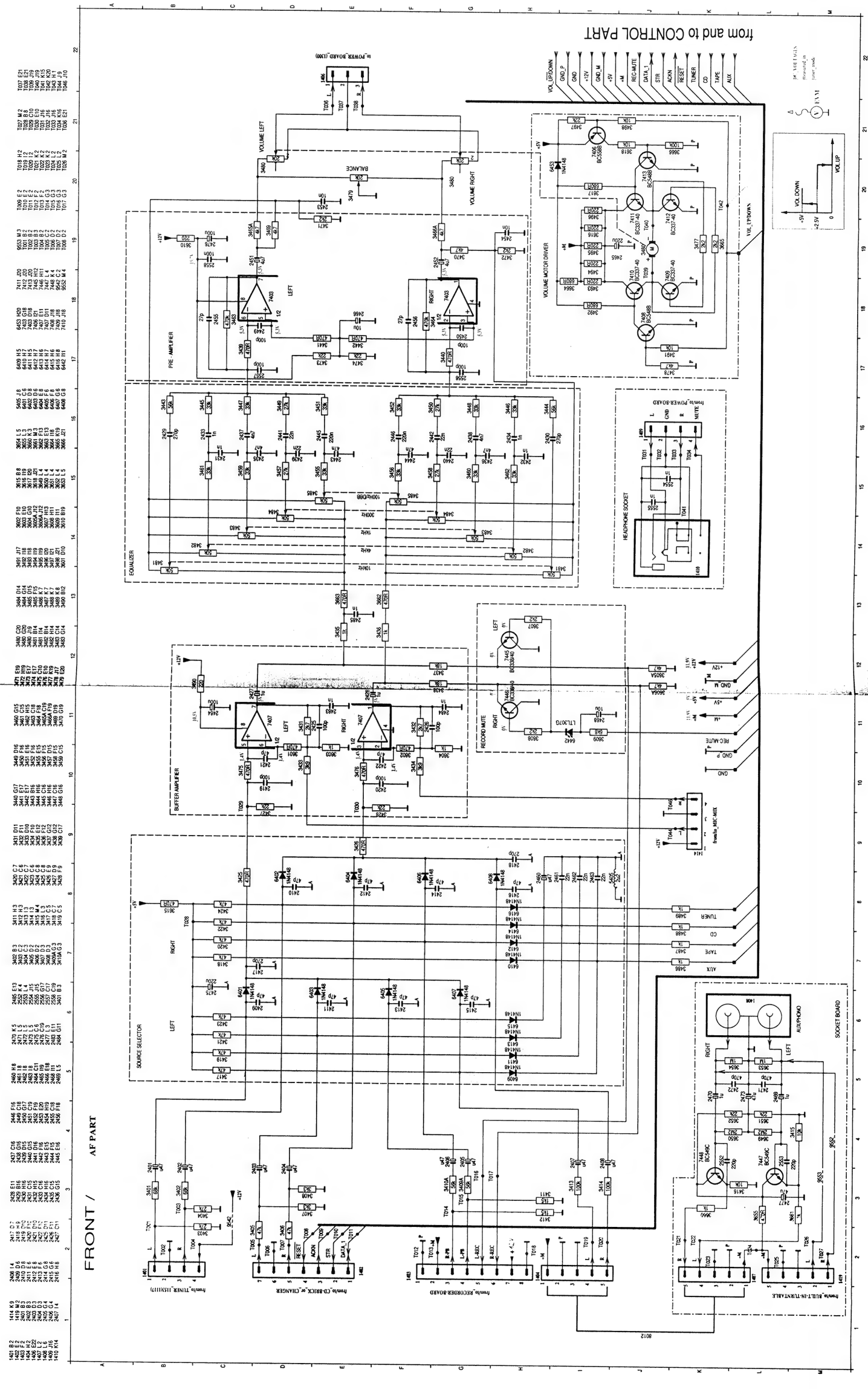
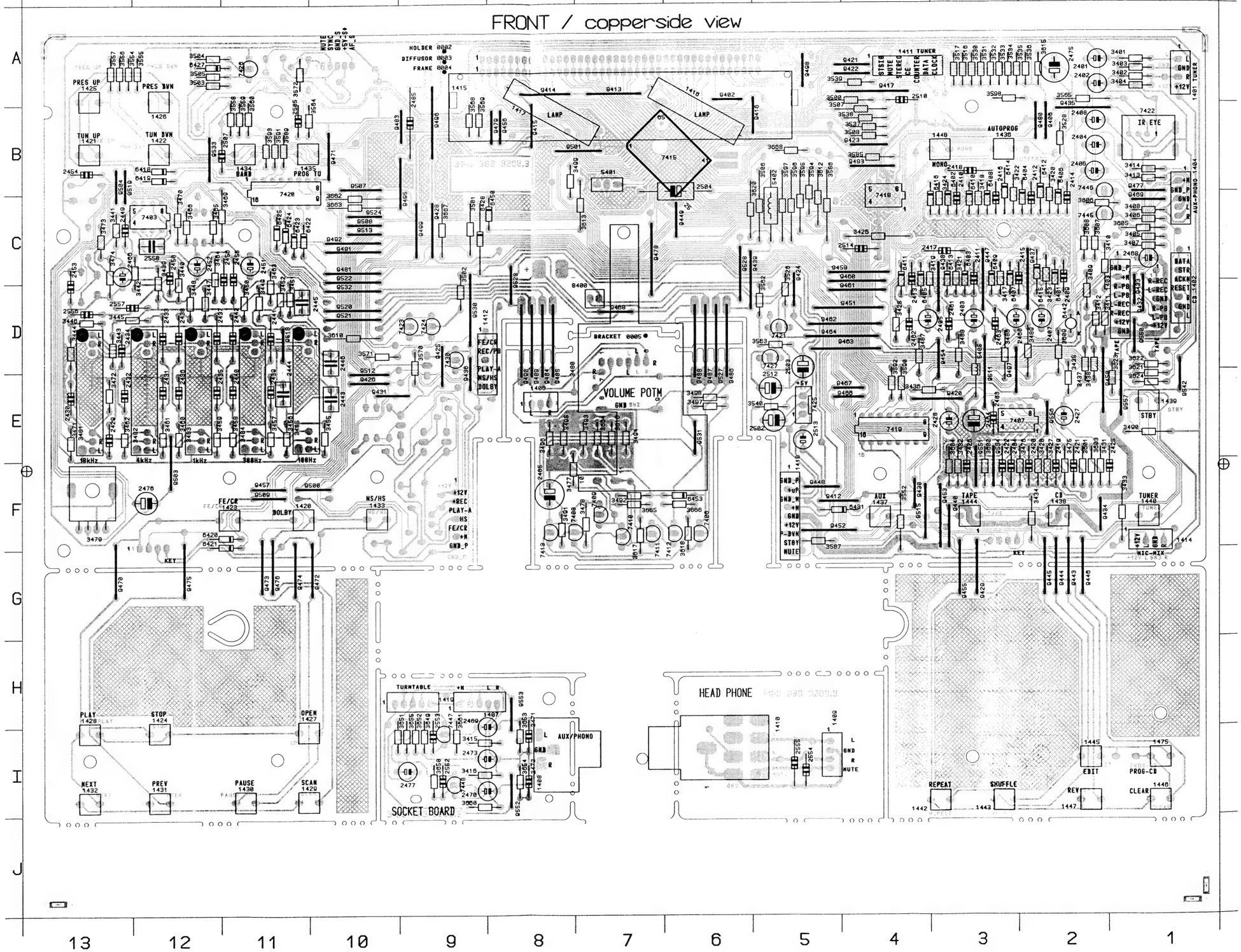
2450	C	12	3471	E	13	3627	I	10			
2451	C	11	3472	E	13	3628	I	9			
2452	C	12	3473	C	13	3629	I	8			
2453	D	13	3474	D	13	3630	I	8			
2454	B	13	3475	F	2	3631	I	9			
2455	C	11	3476	E	3	3632	I	9			
2456	C	12	3477	F	8	3633	I	9			
2460	D	3	3478	F	7	3662	C	10			
2461	D	3	3479	F	13	3663	C	10			
2462	D	4	3480	D	7	3664	E	7			
2463	D	3	3481	D	13	3665	F	7			

FRONT / AF PART



FRONT / copperside view



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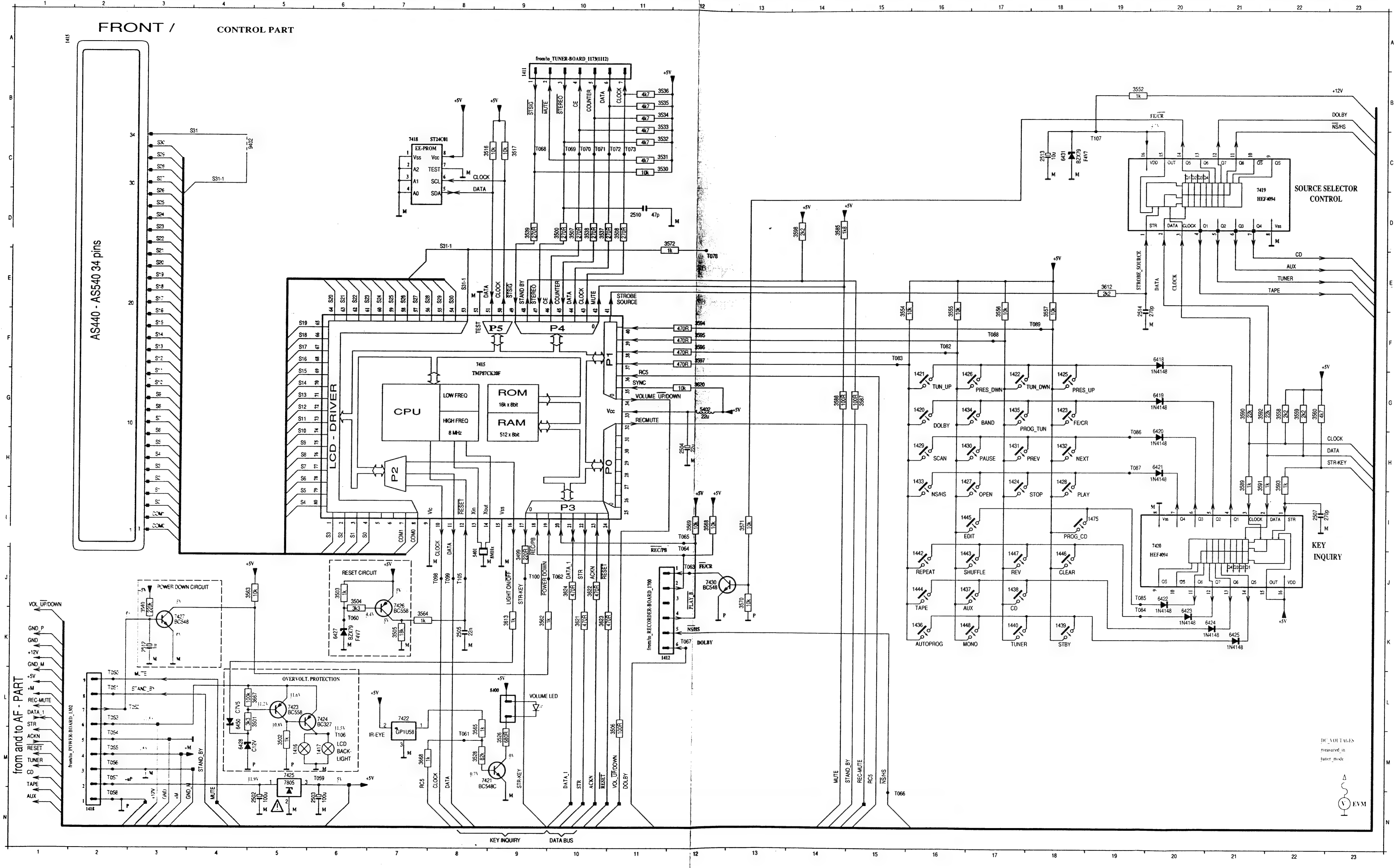
0003	A	6	2465	F	8	3483	D	12	3667	C	9
0004	A	6	2466	C	13	3484	D	11	3668	B	5
0005	D	7	2468	C	1	3485	D	11	5401	B	7
1401	A	1	2469	H	9	3486	E	3	5402	B	5
1402	C	1	2470	I	9	3487	E	4	5405	E	3
1403	C	1	2471	H	8	3488	E	3	6401	D	2
1404	B	1	2472	I	8	3489	E	2	6402	C	3
1406	E	6	2473	I	9	3490	E	1	6403	D	3
1407	H	6	2475	A	2	3491	F	8	6404	C	3
1408	I	6	2476	F	12	3492	F	7	6405	D	4
1409	I	6	2477	I	10	3493	E	7	6406	C	2
1410	I	6	2483	E	3	3494	E	7	6407	D	3
1411	A	4	2484	F	3	3495	E	8	6408	C	3
1412	D	6	2485	A	9	3496	E	8	6409	D	3
1414	F	1	2502	E	5	3497	E	6	6410	C	3
1415	A	5	2503	D	5	3498	E	6	6411	D	4
1416	B	6	2504	B	6	3499	B	8	6412	C	2
1417	B	7	2505	A	11	3500	A	4	6413	D	3
1418	F	5	2507	B	12	3501	C	9	6414	C	3
1419	H	10	2510	A	4	3502	C	9	6415	D	2
1420	F	11	2512	E	5	3503	A	11	6416	C	4
1421	B	13	2513	E	5	3504	A	12	6418	B	12
1422	B	12	2514	C	4	3505	A	12	6419	B	12
1423	F	12	2552	I	9	3506	C	5	6420	F	12
1424	I	12	2553	I	9	3507	B	4	6421	F	12
1425	A	13	2554	I	5	3508	B	4	6422	C	11
1426	A	12	2555	I	5	3516	A	3	6423	C	11
1427	I	10	2556	D	13	3517	A	3	6424	C	11
1428	I	13	2557	D	13	3526	D	5	6425	C	11
1429	I	10	2558	C	12	3528	B	2	6427	A	12
1430	I	11	3401	A	1	3530	A	3	6428	C	9
1431	I	12	3402	A	1	3531	A	3	6431	F	5
1432	I	13	3403	A	1	3532	A	3	6442	D	2
1433	F	10	3404	A	1	3533	A	3	6450	C	9
1434	B	11	3405	C	1	3534	A	3	6453	F	7
1435	B	11	3406	C	1	3535	A	3	7403	C	12
1436	B	3	3407	C	1	3536	A	2	7406	F	6
1437	F	4	3408	C	1	3537	B	4	7407	E	2
1438	F	2	3409	D	2	3538	B	4	7408	F	8
1439	E	1	3410	D	2	3539	A	4	7409	F	7
1440	F	1	3411	D	2	3540	E	6	7410	F	7
1442	I	3	3412	D	2	3552	F	4	7411	F	7
1443	I	3	3413	B	1	3554	A	13	7412	F	6
1444	F	3	3414	B	1	3555	A	12	7413	F	8
1445	I	2	3415	I	9	3556	A	13	7418	C	4
1446	I	1	3416	I	8	3557	A	13	7419	E	4
1447	I	2	3417	D	3	3558	B	11	7420	B	11
1448	B	3	3418	C	3	3559	B	11	7421	D	5
1475	I	1	3419	D	4	3560	B	11	7422	B	1
2401	A	2	3420	C	2	3562	D	5	7423	D	9
2402	A	2	3421	B	3	3563	D	5	7424	D	9
2403	D	3	3422	C	3	3564	A	11	7425	E	5
2404	B	2	3423	D	2	3565	A	2	7426	A	11
2405	D	4	3424	C	3	3568	B	9	7427	D	5
2406	B	2	3425	D	4	3569	B	9	7430	D	9
2407	D	2	3426	C	4	3570	E	9	7445	C	2
2408	B	2	3427	F	2	3571	D	10	7446	C	2
2409	C	2	3428	F	2	3572	A	11	7447	I	9
2410	B	3	3431	F	2	3585	B	4	7448	I	9
2411	C	3	3432	F	3	3586	C	5	8400	D	7
2412	B	2	3433	F	1	3587	F	5			
2413	C	4	3434	F	2	3589	B	11			
2414	B	2	3435	E	2	3590	D	4			
2415	C	3	3436	E	3	3591	B	11			
2416	B	3	3437	D	2	3592	D	4			
2417	C	4	3438	D	2	3593	B	11			
2418	B	3	3439	D	12	3594	B	5			
2419	F	2	3440	D	12	3595	B	5			
2420	F	2	3441	C	13	3596	B	5			
2421	E	2	3442	D	13	3597	B	5			
2422	E	3	3443	D	13	3598	A	2			
2425	F	2	3444	D	13	3601	E	2			
2426	F	3	3445	D	12	3602	F	3			
2427	E	2	3446	D	13	3603	F	2			
2428	E	3	3447	D	12	3604	E	3			
2429	E	13	3448	D	12	3605	C	1			
2430	E	13	3449	D	11	3606	C	1			
2431	E	12	3450	D	11	3607	C	2			
2432	E	13	3451	D	11	3608	C	2			
2433	D	12	3452	D	11	3609	E	2			
2434	D	13	3455	E	10	3610	D	10			
2435	E	12	3456	E	11	3612	B	5			
2436	E	12	3457	E	11	3613	C	7			
2437	D	12	3458	E	11	3615	A	2			
2438	D	12	3459	E	12	3616	E	7			
2439	E	11	3460	E	12	3617	G	7			
2440	E	11	3461	E	12	3618	F	6			
2441	D	11	3462	E	13	3620	B	6			
2442	D	11	3463	C	11	3621	E	1			
2443	E	10	3464	D	12	3622	D	1			
2444	E	11	3465	C	12	3623	E	2			
2445	D	11	3466	C	12	3624	E	1			
2446	D	10	3469	C	12	3649	H	9			
2449	C	13	3470	C	12	3650	I	9			
2450	C	12	3471	E	13	3651	H	10			
2451	C	11	3472	E	13	3652	I	9			
2452	C	12	3473	C	13	3653	H	8			
2453	D	13	3474	D	13	3654	I	8			
2454	B	13	3475	F	2	3655	I	9			
2455	C	11	3476	E	9	3660	I	9			
2456	C	12	3477	F	6	3661	I	9			
2458	D	3	3478	F	7	3662	C	10			
2461	D	3	3479	F	13	3663	C	10			
2462	D	4	3480	D	7	3664	E	7			
2463	D	3	3481	D	13	3665	F	7			

Ref	Pos
1411	A 9
1412	K12
1415	A 1
1416	M 5
1417	M 6
1418	N 2
1420	G16
1421	G16
1422	G17
1423	G18
1424	H17
1425	G18
1426	G16
1427	H16
1428	H18
1429	H16
1430	H16
1431	H17
1432	H18
1433	H16
1434	G16
1435	G17
1436	K16
1437	J16
1438	J17
1439	K18
1440	K17
1442	J16
1443	J16
1444	J16
1445	I16
1446	J18
1447	J17
1448	K16
1475	I19
2502	N 5
2503	N 6
2504	H12
2505	K 8
2507	I22
2510	D11
2512	K 3
2513	C18
2514	E19
3499	J 9
3500	D10
3501	L 5
3502	M 5
3503	J 6
3504	J 6
3505	K 7
3506	L11
3507	D10
3508	D11
3516	C 8
3517	C 9
3526	M 9
3528	M 8
3530	C11
3531	C11
3532	C11
3533	B11
3534	B11
3535	B11
3536	B11
3537	D10
3538	D10
3539	D 9
3540	J 3
3552	B19
3554	E15
3555	E16
3556	E17
3557	E18
3558	G22
3559	G22
3560	G22
3562	K 9
3563	J 5
3564	K 7
3565	M 8
3568	I12
3569	I12
3570	J13
3571	I13
3572	D11
3585	D14
3586	G14
3587	G15
3589	H21
3590	G21
3591	H21
3592	G21
3593	H22
3594	F12
3595	F12
3596	F12
3597	F12
3598	D14
3612	E19
3613	K 9
3620	G12
3621	K10
3622	J10
3623	K10
3624	J10
3667	L 5
3668	M 7
5401	J 8
5402	G12
6418	F20
6419	G20
6420	H20
6421	H20
6422	J20
6423	K20
6424	K21
6425	K21
6427	K 6
6428	M 4
6431	C18
6450	L 4
7415	F 8
7418	C 7
7419	C21
7420	I20
7421	M 8
7422	L 7
7423	L 5
7424	L 6
7425	M 5
7426	J 7
7427	K 3
7430	J12
8400	L 9
9402	C 4
T050	L 2
T051	L 2
T052	L 3
T053	L 2
T054	M 2
T055	M 2
T056	M 2
T057	M 2
T058	N 2
T059	M 6
T060	K 6
T061	M 8
T062	J10
T063	J12
T064	I12
T065	I12
T066	N15
T067	K12
T068	C 9
T069	C10
T070	C10
T071	C10
T072	C11
T073	C11
T078	E12
T082	F16
T083	F15
T084	J19
T085	J19
T086	H19
T087	H19
T088	F17
T089	F18
T098	J 8
T099	J 8
T100	J 9
T105	J 8
T106	M 6
T107	C19

FRONT / CONTROL PART

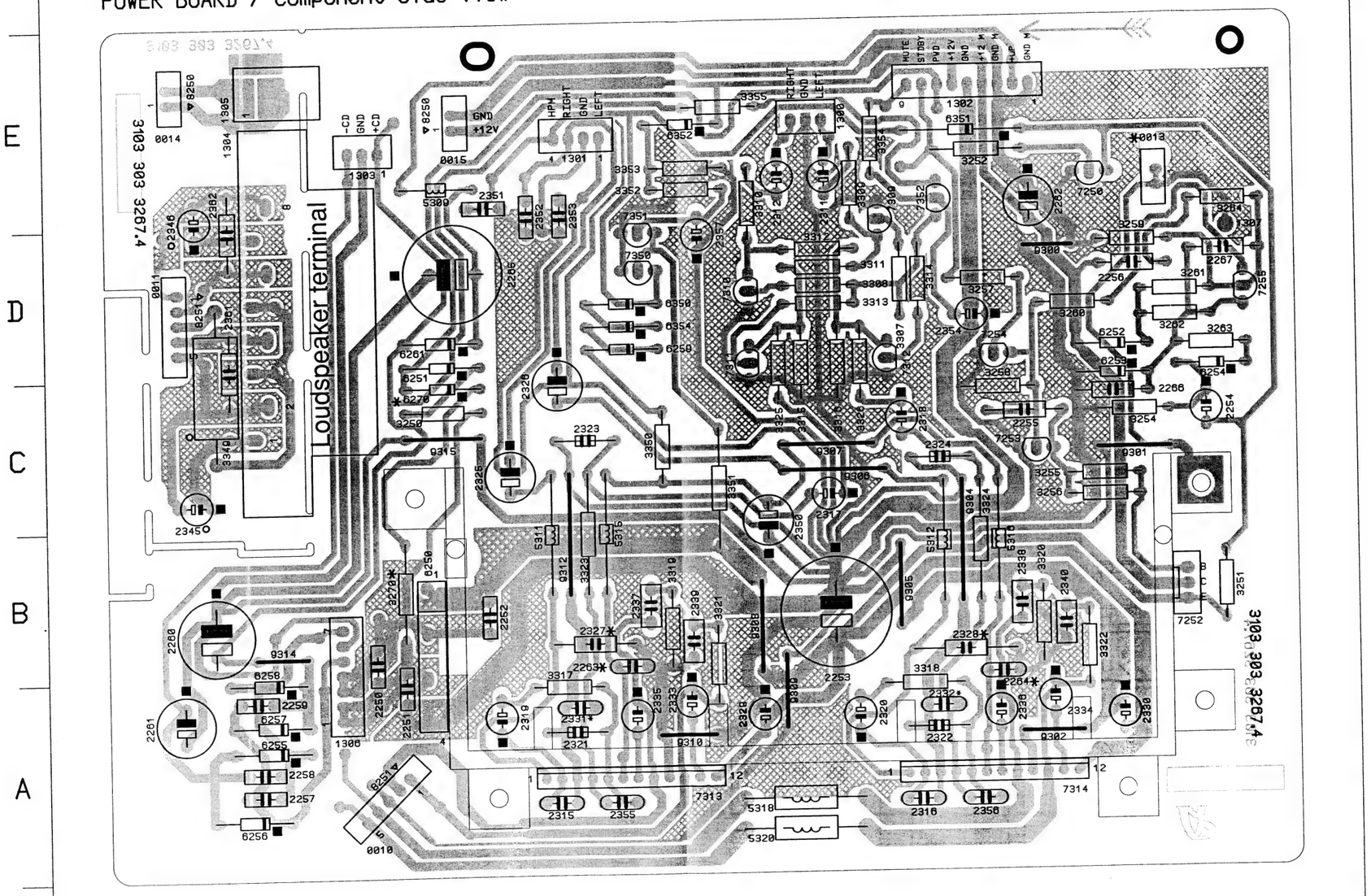


* NOT USED COMPONENTS

o FOR SURROUND ONLY

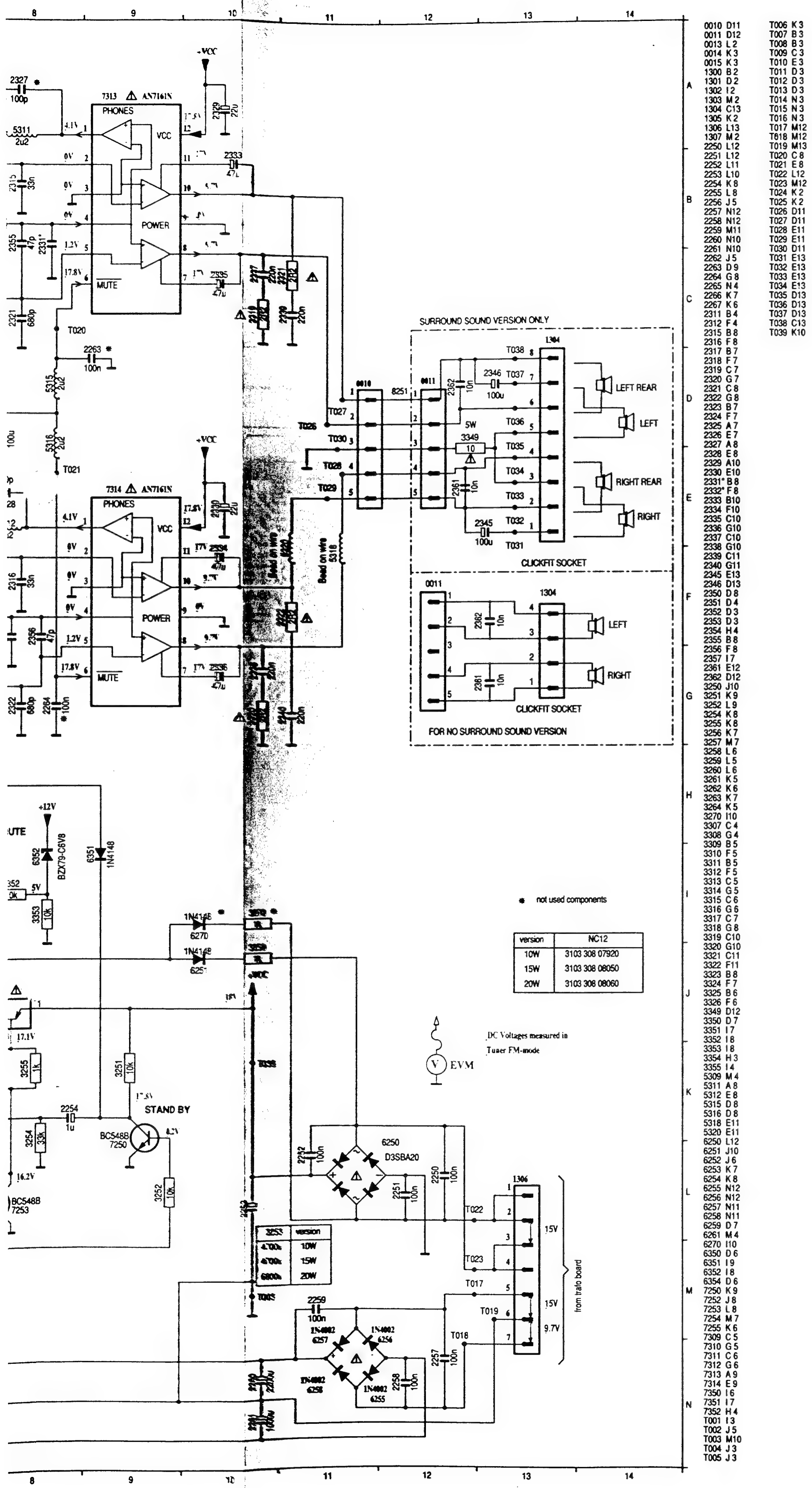
E B C FOR ALL TRANSISTORS

POWER BOARD / Component side view



7		6		5		4		3		2		1		
	9304 B 2	7310 D 4	6270 C 6	6250 B 6	3352 E 4	3319 B 4	3308 D 3	3256 C 1	2354 D 2	2336 A 2	2325 C 5	2312 E 3	2258 A 7	1305 E 7
	9302 A 2	7309 D 3	6261 D 6	5320 A 3	3351 C 4	3318 A 3	3307 D 3	3255 C 1	2353 E 5	2335 A 4	2324 C 2	2311 E 3	2257 A 7	1304 D 7
9315 C 6	9301 C 1	7255 D 1	6259 D 5	5318 A 3	3350 C 4	3317 A 5	3270 B 6	3254 C 1	2352 E 5	2334 A 2	2323 C 5	2267 D 1	2256 D 1	1303 E 6
9314 B 7	9300 D 2	7254 D 2	6258 A 7	5316 B 2	3349 C 7	3316 D 3	3264 E 1	3252 E 2	2351 E 5	2333 A 4	2322 A 2	2266 C 1	2255 C 2	1302 E 2
9312 B 5	7352 E 2	7253 C 2	6257 A 7	5315 B 5	3326 D 3	3315 D 3	3263 D 1	3251 B 1	2350 C 4	2332* A 2	2321 A 5	2265 D 6	2254 C 1	1301 E 5
9310 A 4	7351 D 4	7252 B 1	6256 A 7	5312 B 2	3325 D 3	3314 D 3	3262 D 1	3250 C 6	2346 E 7	2331* A 5	2320 A 3	2264 A 2	2253 B 3	1300 E 3
9309 A 3	7350 D 4	7250 E 1	6255 A 7	5311 B 5	3324 B 2	3313 D 3	3261 D 1	3260 D 2	2345 C 7	2330 A 1	2319 A 5	2263 B 4	2252 B 5	0015 E 6
9308 B 4	7314 A 2	6354 D 5	6254 D 1	5309 E 6	3323 B 5	3312 D 3	3260 D 2	2362 D 7	2340 B 2	2329 A 4	2318 C 3	2262 E 2	2251 A 6	0014 E 7
9307 C 3	7313 A 5	6352 E 4	6253 C 1	3355 E 4	3322 B 1	3311 D 3	3259 D 1	2361 D 7	2339 B 4	2328 B 2	2317 C 3	2261 A 7	2250 B 6	0013 E 1
9306 C 3	7312 D 3	6351 E 2	6252 D 1	3354 E 3	3321 B 4	3310 E 4	3258 C 2	2356 A 2	2338 B 2	2327 B 5	2316 A 3	2260 B 7	1307 E 1	0011 D 7
9305 B 3	7311 D 4	6350 D 5	6251 D 6	3353 E 4	3320 B 2	3309 E 3	3257 D 2	2355 A 5	2337 B 4	2326 C 5	2315 A 5	2259 A 7	1306 B 6	0010 A 6

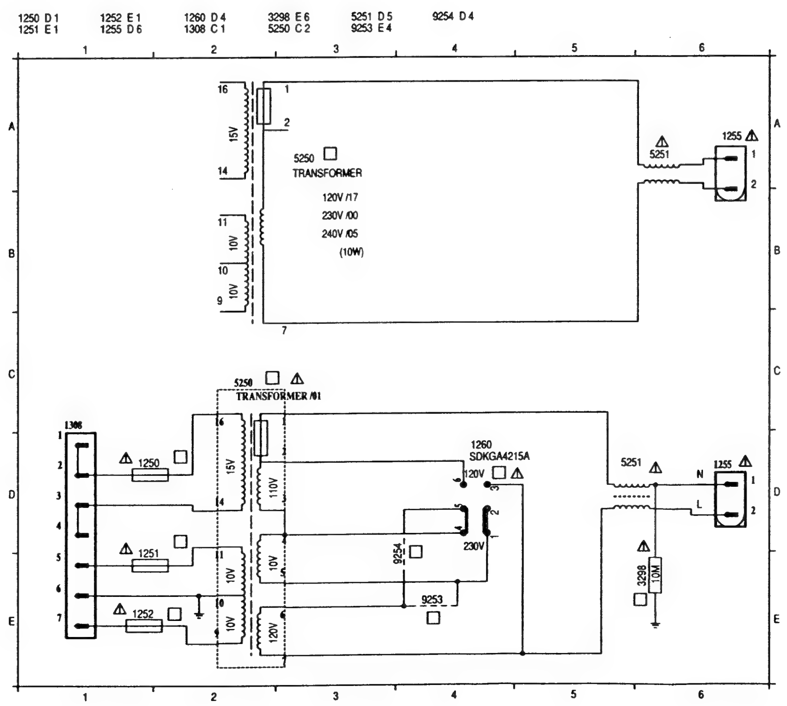
Transformer Board

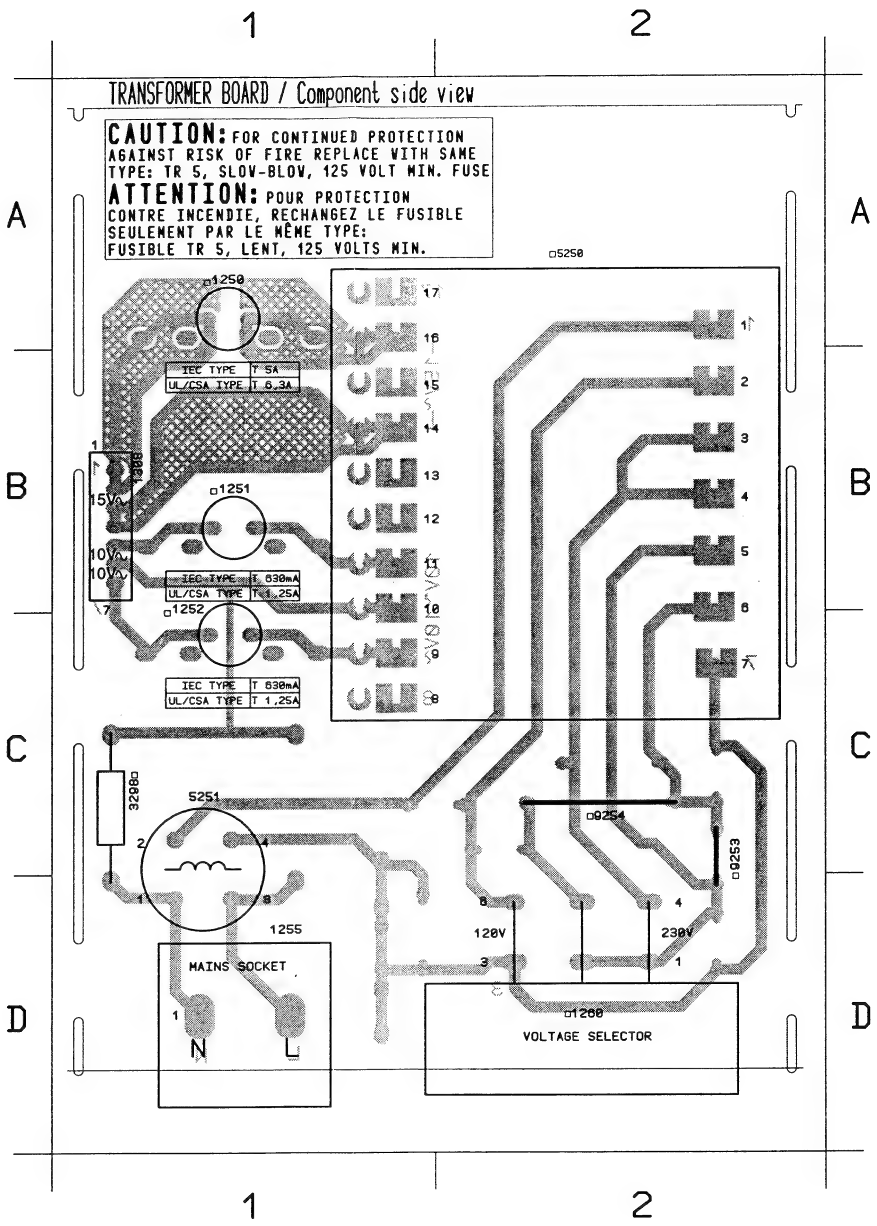


□ COMPONENTS DEPENDING ON THE VERSION

VERSION \ COMPONENTS □	1260	9253	9254	5250	3298	VALUE OF FUSE 1250 (1254)	1251 (1253)	1252 (1256)
/00 (IEC 230V)				/00		5A	630mA	630mA
/05[1] (240V)		X		/01		5A	630mA	630mA
/17 (UL 120V)				/17	X	6,3A	1,25A	1,25A
/01 /10 (120V,230V)	X		X	/01		5A	630mA	630mA
/05[1] (240V)				/05		5A	630mA	630mA

1) for 15W and 20W versions /01 transformer
for 10W version /05 transformer

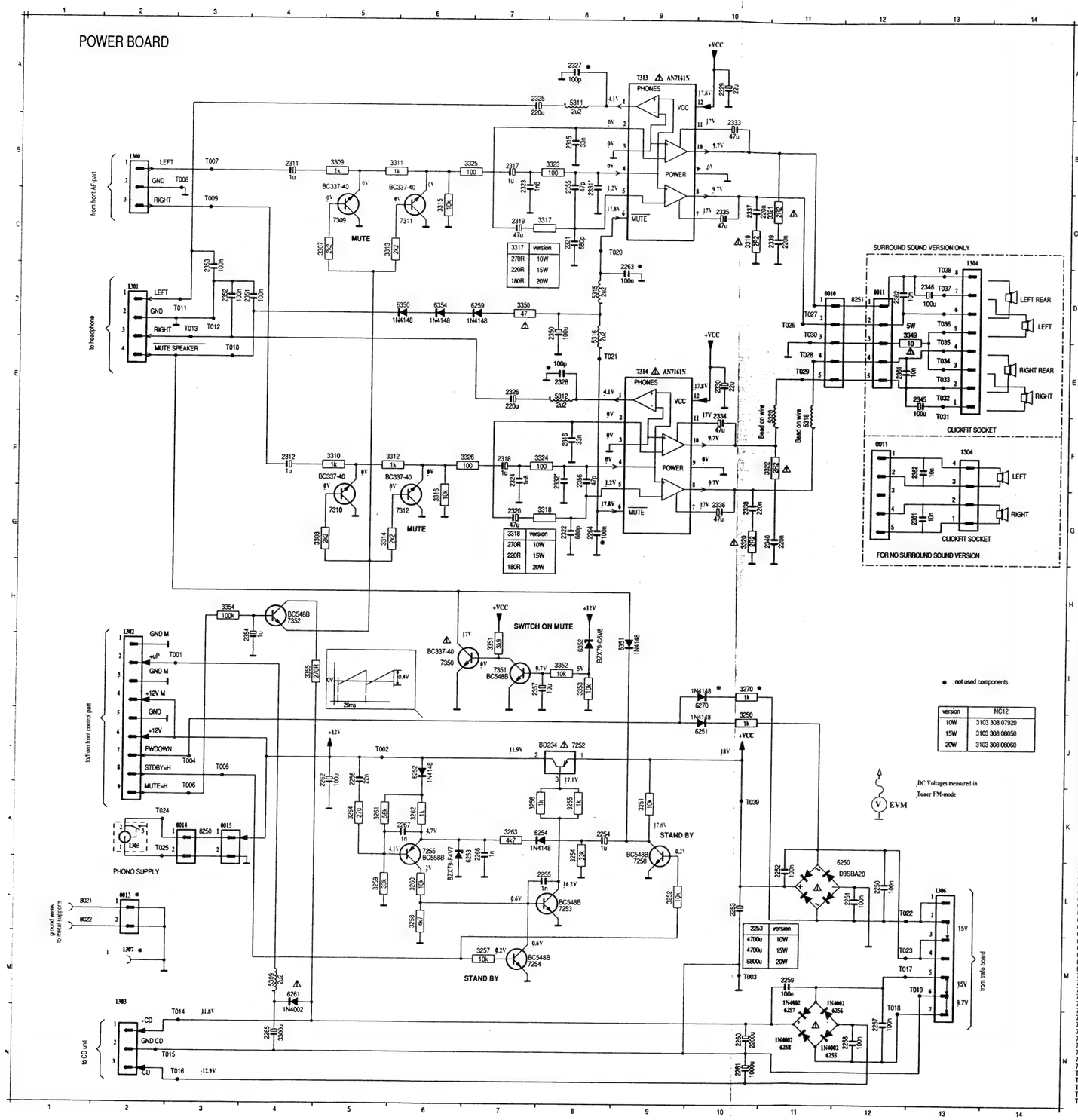




1250	B	1
1251	B	1
1252	C	1
1253	B	1
1254	B	1
1255	D	1
1256	C	1
1257	D	1
1258	D	1
1260	D	2
1308	B	1
3298	C	1
3299	C	1
5250	B	2
5251	C	1
9250	C	2
9251	D	2
9252	C	2
9253	C	2
9254	C	2
9255	C	2
9256	C	2
9257	D	1

Transformer Board

POWER BOARD



version	3317
270R	10W
220R	15W
180R	20W

version	3318
270R	10W
220R	15W
180R	20W

version	2253
4700u	10W
4700u	15W
6800u	20W

version	NC12
10W	3103 308 07920
15W	3103 308 08050
20W	3103 308 08060

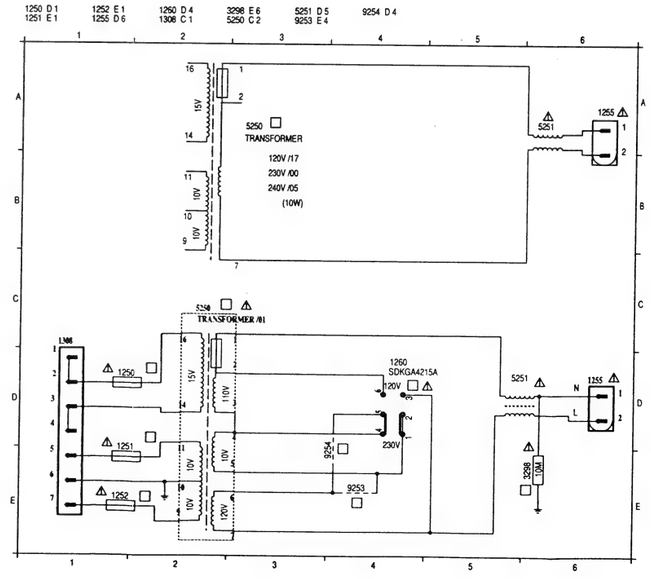
0010 D11
0011 D12
0013 L2
0014 K3
0015 K3
1300 B2
1301 D2
1302 I2
1303 M2
1304 C13
1305 K2
1306 L13
1307 M2
2250 L12
2251 L12
2252 L11
2253 L10
2254 K8
2255 L8
2256 J5
2257 N12
2258 N12
2259 M11
2260 N10
2261 N10
2262 J5
2263 D9
2264 G8
2265 N4
2266 K7
2267 K6
2311 B4
2312 F4
2315 B8
2316 F6
2317 B7
2318 F7
2319 C7
2320 G7
2321 C8
2322 G8
2323 B7
2324 F7
2325 A7
2326 E7
2327 A8
2328 E8
2329 A10
2330 E10
2331 B8
2332 F8
2333 B10
2334 F10
2335 C10
2336 G10
2337 C10
2338 G10
2339 C11
2340 G11
2345 E13
2346 D13
2350 D8
2351 D4
2352 D3
2353 D3
2354 H4
2355 B8
2356 F8
2357 I7
2361 E12
2362 D12
3250 J10
3251 K9
3252 L9
3254 K8
3255 K8
3256 K7
3257 M7
3258 L6
3259 L5
3260 L6
3261 K5
3262 K6
3263 K7
3264 K5
3270 I10
3307 C4
3308 G4
3309 B5
3310 F5
3311 B5
3312 F5
3313 G5
3314 G5
3315 C6
3316 G6
3317 C7
3318 G8
3319 G10
3320 G10
3321 C11
3322 F11
3323 B8
3324 F7
3325 B6
3326 F6
3349 D12
3350 D7
3351 I7
3352 I8
3353 I8
3354 H3
3355 I4
5309 M4
5311 A8
5312 E8
5315 D8
5316 D8
5318 E11
5320 E11
6250 L12
6251 J10
6252 J6
6253 K7
6254 K8
6255 N12
6256 N12
6257 N11
6258 N11
6259 D7
6261 M4
6270 I10
6350 D6
6351 I9
6352 I8
6354 D6
7250 K9
7252 J8
7253 L8
7254 M7
7255 K6
7309 C5
7310 G5
7311 C6
7312 G6
7313 A9
7314 E9
7350 I6
7351 I7
7352 H4
T001 I3
T002 J5
T003 M10
T004 J3
T005 J3
T006 K3
T007 B3
T008 B3
T009 C3
T010 E3
T011 D3
T012 D3
T013 D3
T014 N3
T015 N3
T016 N3
T017 M12
T018 M12
T019 M13
T020 C8
T021 E8
T022 L12
T023 M12
T024 K2
T025 K2
T026 D11
T027 D11
T028 E11
T029 E11
T030 D11
T031 E13
T032 E13
T033 E13
T034 E13
T035 D13
T036 D13
T037 D13
T038 C13
T039 K10

COMPONENTS DEPENDING ON THE VERSION

VERSION \ COMPONENTS	1258	9253	9254	5258	3298	VALUE OF FUSE 1258 (1254)	1251 (1253)	1252 (1256)
/00 (IEC 230V)				/00		5A	630mA	630mA
/05 1) (240V)		X		/01		5A	630mA	630mA
/17 (UL 120V)				/17	X	6,3A	1,25A	1,25A
/01 /18 (120V,230V)	X		X	/01		5A	630mA	630mA
/05 1) (240V)				/05		5A	630mA	630mA

1) for 15W and 20W versions /01 transformer
for 10W version /05 transformer

1250 D1
1251 E1
1252 E1
1255 D6
1260 D4
1308 C1
3298 E6
5250 C2
5251 D5
9253 E4
9254 D4



RECORDER ADJUSTMENT TABLE

Adjustment	Cassette/Source	Recorder mode	Measure on	Read on	Adjust with	Adjust to
Azimuth [1]	SBC419 or SBC420 8kHz	PLAY A-Deck PLAY B-Deck	◇1 ◇2 or Phone socket	mV - meter	left-hand screw	maximum output left = right
Motor speed [2] Normal speed	SBC419 or SBC420 3150Hz	PLAY A + B-Deck	◇1 ◇2 or Phone socket	Wow and Flutter meter or Counter	3787	0±1%
High speed [3]		HS-Dubbing		Counter	check only	> 5200Hz
Bias current		REC A-Deck Chrome	◇4	mV-meter	3763 left	5,9mV
					3764 right	5,9mV
		REC A-Deck Ferro	◇5		3756	3,8mV
Record current [4]	SBC419 ◇A ◇B Adjust input level to 300mV ± 1dB on ◇1 or ◇2 SBC420	Rec A-Deck Chrome	◇4	mV - meter	3667 left	0,62mV
			◇5		3668 right	0,62mV
		Rec A-Deck Ferro	◇4	mV - meter	check	0,44mV ± 1dB
			◇5		check	0,44mV ± 1dB

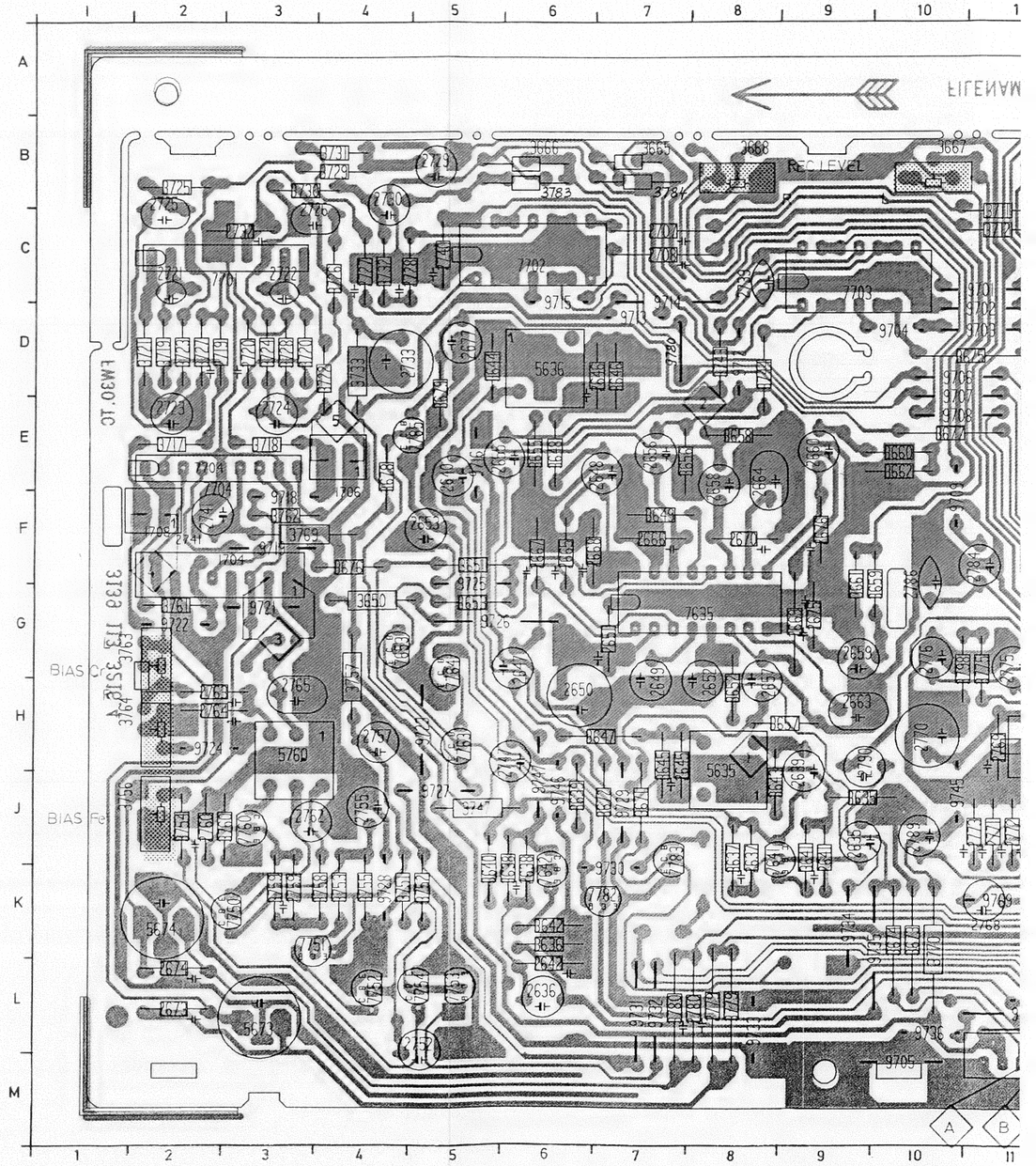
CHECK ONLY

Check	Cassette/Source	Recorder mode	Measure on	Read on	Check if
Wow and Flutter	SBC419 or SBC420 3150Hz	PLAY A or B-Deck	◇1 ◇2	Wow and Flutter meter	≤ 0,3% weighted
		PLAY A and B-Deck	or Phone socket		≤ 0,35% weighted
Erase Oscillator Voltage	any	REC A-deck	◇3 Erase head	mV - meter	Fe ≥ 11,8Vrms Cr ≥ 20,8Vrms
Frequency				Counter	f = 88kHz ± 4kHz
Playback level [5]	Dolby reference cassette (SBC419 or SBC420, 315Hz)	PLAY A-Deck	◇1 ◇2	mV - meter	300mV ± 1dB (350mV ± 1dB)
		PLAY B-Deck			300mV ± 1dB (350mV ± 1dB)
Frequency response Playback	SBC419 or SBC420	PLAY A or B-Deck	◇1 ◇2	mV - meter	125Hz - 12,5kHz within 8dB
Overall	◇A ◇B input level = 3mV	REC A-Deck			125Hz - 12,5kHz within 10dB
		PLAY A-Deck	◇1 ◇2		125Hz - 8kHz dubbing
Distortion	SBC419 or SBC420 ◇A ◇B input level = 30mV	REC A-Deck			
		PLAY A-Deck	◇1 ◇2	mV - meter	D ≤ 3%

SBC 420 Service code: 4822 397 30071
SBC 419 Service code: 4822 397 30069

1) For Azimuth adjustment set needs not to be dismantled. Remove ornamental part of cassette door and put screwdriver (torx5) through holes of cassette door.
2) Pot. on motor has to be preadjusted to *min. speed* first (turn pot ccw to stop position). Difference between Deck A and Deck B has to be ≤2%.
3) Insert SBC419 or SBC420 in B-Deck and use *High speed dubbing* mode to check frequency.
4) Check *Pb level, Frequency Response* and *Distortion* after recording: 300mV ± 1dB, D ≤3% - otherwise readjust record current, respectively bias current.
5) Values in parenthesis are measured with DIN level cassette.

1699	M11	2647	G6	2665	F6	2705	C14	2728	C4	2768	K11	2785	J13	3644	D5	3662	E10	3699	E14	3719	D2	3736	E14	3757	H4	3774
1701	D15	2648	F7	2666	F7	2706	C12	2729	B5	2769	H11	2786	G10	3645	J7	3663	B13	3700	E12	3720	D3	3737	E15	3758	K4	3775
1702	D15	2649	H7	2667	F6	2707	C7	2730	B4	2770	H10	2787	J11	3646	D7	3664	B12	3701	F14	3721	D2	3738	F14	3759	K3	3776
1703	E12	2650	H6	2668	F6	2708	C7	2732	B3	2771	J11	2788	G10	3647	H6	3665	B7	3702	E12	3722	D4		H15	3760	J2	3777
1704	F3	2651	G7	2669	G9	2709	C13	2733	D4	2772	J11	2789	J10	3648	E6	3666	B6	3703	E13	3723	D2		H14	3761	G2	3778
1705	F4	2652	H8	2670	F8	2710	C12	2739	C8	2773	J11	2790	H9	3649	F7	3667	B10	3704	E12	3724	D3		H15	3762	F3	3779
1708	F2	2653	F5	2673	L2	2712	C13	2740	C5	2774	J12	2791	J13	3650	G4	3668	B8	3705	C13	3725	B2	3743	D8	3763	H1	3780
2635	J9	2655	E6	2674	L2	2713	D12	2741	F2	2775	G11	2792	H14	3651	F5	3671	J7	3706	E11	3726	C4	3744	D8	3764	H1	3781
2636	L6	2656	E7	2675	G9	2719	D2	2752	L5	2776	G10	3635	J9	3652	H8	3672	J7	3707	E14	3727	D2	3745	E13	3765	J16	3783
2637	J8	2657	H8	2676	F9	2720	D3	2755	J4	2777	J13	3636	K6	3653	G5	3673	K10	3708	E12	3728	D3	3746	E12	3766	J16	3784
2638	K6	2658	F8	2677	D5	2721	C2	2757	H4	2778	G13	3637	J8	3655	E6	3674	K10	3709	C13	3729	B4	3747	J5	3767	K12	3785
2639	J9	2659	G9	2699	E13	2722	C3	2759	K3	2779	L8	3638	K6	3656	E7	3675	D11	3710	C12	3730	B3	3751	K4	3768	L13	3786
2640	E5	2660	E9	2700	E13	2723	E2	2760	J2	2780	L8	3639	J6	3657	H9	3676	F4	3711	C11	3731	B4	3752	K5	3769	F3	3787
2641	J9			2701	D13	2724	E3	2762	J3	2781	J14	3640	K5	3658	E8	3677	E10	3712	C11	3732	C4	3753	K4	3770	K10	
2642	L6			2702	D12	2725	B2	2763	H2	2782	H13	3641	J9	3659	G9	3678	E4	3713	G12	3733	D4	3754	J2	3771	K12	3789
2645	J7	2663	H9	2703	E13	2726	B3	2764	H2	2783	H13	3642	K6	3660	E10	3697	F13	3717	E2	3734	E15	3755	K4	3772	K12	3790
2646	D6	2664	F8	2704	E12	2727	C4	2765	H3	2784	F11	3643	J8	3661	G9	3698	F13	3718	E3			3756	J1	3773	K11	



1699	M11
1701	D15
1702	D15
1703	E12
1704	F3
1706	F4
1708	F2
2635	J9
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2637	J8
2638	K6
2639	J9
2640	E5
2641	J9
2642	L6
2645	J7
2646	D6
2647	G6
2648	F7
2649	H7
2650	H6
2651	G7
2652	H8
2653	F5
2655	E6
2656	E7
2657	H8
2658	F8
2659	G9
2660	E9
2663	H9
2664	F8
2665	F6
2666	F7
2667	F6
2668	F6
2669	G9
2670	F8
2673	L2
2674	L2
2675	G9
2676	F9
2677	D5
2699	E13
2700	E13
2701	D13
2702	D12
2703	E13
2704	E12
2705	C14
2706	C12
2707	C7
2708	C7
2709	C13
2710	C12
2712	C13
2713	D12
2719	D2
2720	D3
2721	C2
2722	C3
2723	E2
2724	E3
2725	B2
2726	B3
2727	C4
2728	C4
2729	B5
2730	B4
2732	B3
2733	D4
2739	C8
2740	C5
2741	F2
2752	L5
2755	J4
2757	H4
2759	K3
2760	J2
2762	J3
2763	H2
2764	H2
2765	H3
2768	K11
2769	H11
2770	H10
2771	J11
2772	J11
2773	J11
2774	J12
2775	G11
2776	G10
2777	J13
2778	G13
2779	L8
2780	L8
2781	J14
2782	H13
2783	H13
2784	F11
2785	J13
2786	G10
2787	J11
2788	G10
2789	J10
2790	H9
2791	J13
2792	H14
3635	J9
3636	K6
3637	J8
3638	K6
3639	J6
3640	K5
3641	J9
3642	K6
3643	J8
3644	D5
3645	J7
3646	D7
3647	H6
3648	E6
3649	F7
3650	G4
3651	F5
3652	H8
3653	G5
3655	E6
3656	E7
3657	H9
3658	E8
3659	G9
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3668	B8
3671	J7
3672	J7
3673	K10
3674	K10
3675	D11
3676	F4
3677	E10
3678	E4
3697	F13
3698	F13
3699	E14
3700	E12
3701	F14
3702	E12
3703	E13
3704	E12
3705	C13
3706	E11
3707	E14
3708	E12
3709	C13
3710	C12
3711	C11
3712	C11
3713	G12
3717	E2
3718	E3
3719	D2
3720	D3
3721	D2
3722	D4
3723	D2
3724	D3
3725	B2
3726	C4
3727	D2
3728	D3
3729	B4
3730	B3
3731	B4
3732	C4
3733	D4
3734	E15
3736	E14
3737	E15
3738	F14
	H15
	H14
	H15
3743	D8
3744	D8
3745	E13
3746	E12
3747	J5
3751	K4
3752	K5
3753	K4
3754	J2
3755	K4
3756	J1
3757	H4
3758	K4
3759	K3
3760	J2
3761	G2
3762	F3
3763	H1
3764	H1
3765	J16
3766	J16
3767	K12
3768	L13
3769	F3
3770	K10
3771	K12
3772	K12
3773	K11
3774	J12
3775	G11
3776	K13
3777	J13
3778	H13
3779	L8
3780	L7
3781	C14
3783	B 6
3784	B 7
3785	B12
3786	B13
3787	B15
3789	C14
3790	C14
3792	C15
3796	H16
5600	K16
5635	J8
5636	D6
5673	L3
5674	K2
5760	H3
6706	F11
6707	F11
7635	G8
7641	J8
7642	K6
7653	G4
7700	D13
7701	C2
7702	C6
7703	C9
7704	E2
7706	F15
7744	K16
7745	K15
7746	K15
7750	K3
7751	K3
7752	L4
7753	L5
7754	L5
7760	J3
7763	H5
7764	H5
7765	L16
7767	L14
7768	L13
7770	H12
7776	K13
7781	C16
7782	K7
7783	K7
7792	C15
7797	D16
9700	F13
9701	C11
9702	C11
9703	D11
9704	D10
9705	D10
9706	D10
9707	D10
9708	E10
9709	F10
9710	G12
9711	G12
9712	D8
9713	D7
9714	C7
9715	C6
9716	E5
9718	F3
9719	F3
9720	F4
9721	G3
9722	G2
9723	H5
9724	H2
9725	G5
9726	G5
9727	J5
9728	K4
9729	J7
9730	K7
9731	L7
9732	L7
9733	L8
9734	K9
9735	K10
9736	L10
9737	L11
9738	L11
9739	K12
9740	K13
9741	L13
9742	L14
9743	L14
9744	L11
9745	J10
9746	J6
9747	J6
9750	G13
9751	G13
9752	G14
9753	G14
9754	G14
9756	K15
9758	J15
9759	J16
9760	G16
9761	F15
9762	E15
9763	E15
9764	F16
9765	D15
9766	D16
9767	C16
9769	K11
9770	F16
3679	D5
6708	F15
6709	F16
9780	D7
9781	F16
9783	J15
9784	B14

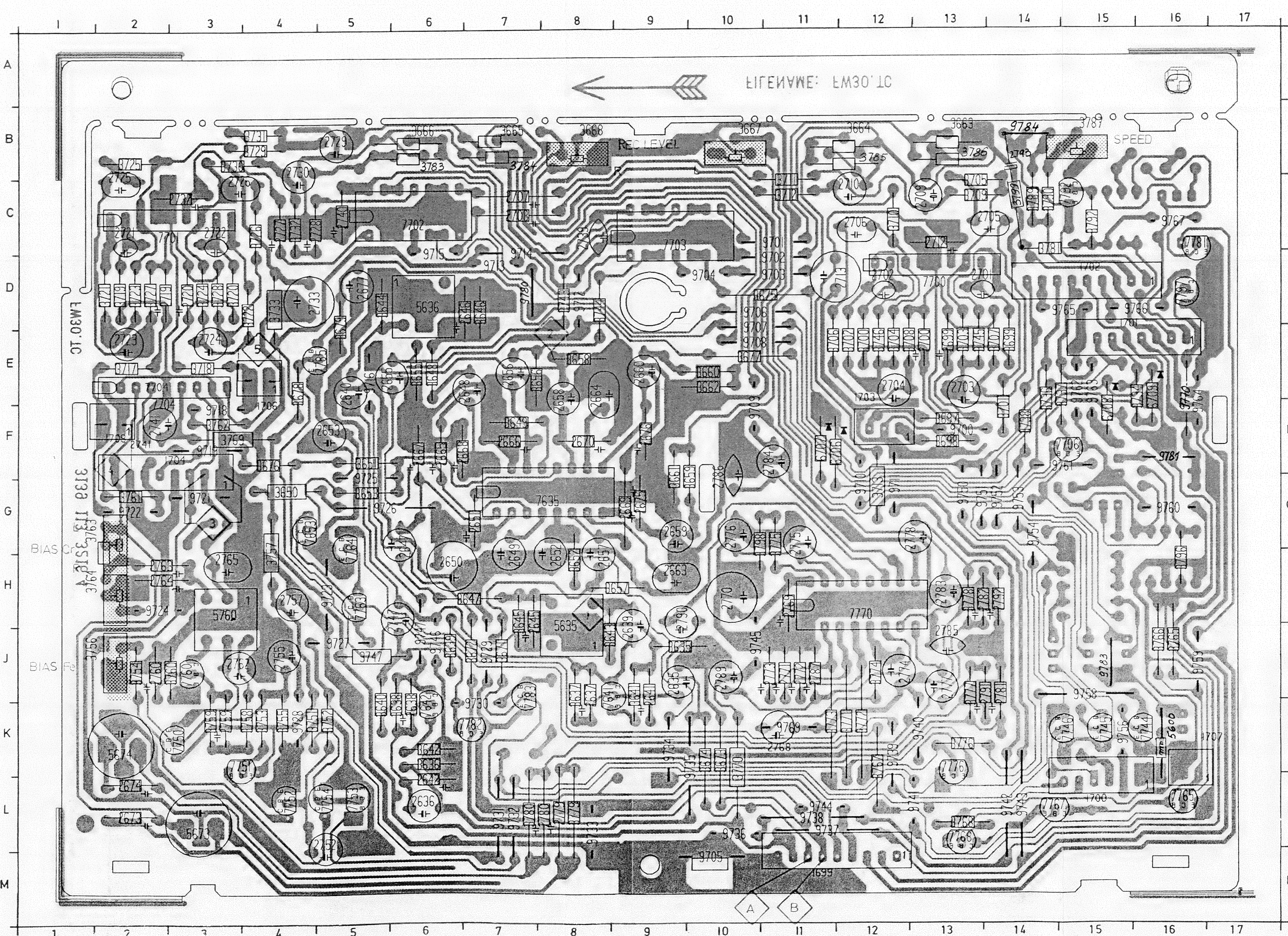
Adjust	
ith	to
hand ew	maximum output left = right
87	0±1%
only	> 5200Hz
3 left	5,9mV
right	5,9mV
56	3,8mV
7 left	0,62mV
right	0,62mV
eck	0,44mV ± 1dB
eck	0,44mV ± 1dB

Check if
≤ 0,3% weighted 0,35% weighted
Fe ≥ 11,8Vrms Cr ≥ 20,8Vrms = 88kHz ± 4kHz
300mV ± 1dB (350mV ± 1dB) 300r : 1dB (350mV ± 1dB)
z - 12,5kHz within 8dB - 12,5kHz within 10dB 5Hz - 8kHz dubbing
D ≤ 3%

er (torx5) through holes

Deck B has to be ≤2%.

ord current, respectively



DOLBY RECORDER BOARD

Pb-deck B
PB HEAD B LEFT
PB HEAD B RIGHT
1703
Rec/Pb-deck A
R/P HEAD A LEFT
R/P HEAD A RIGHT
ERASE HEAD
1704
PRE-AMP B-deck
PRE-AMP A-deck
7700A UPC1313HA
7700B UPC1313HA
7701A UPC1313HA
7701B UPC1313HA
ANALOG SWITCH (DECK A/B SWITCH)
7703 MC14066B
A-DECK=10.3V
B-DECK=0V
DECK A/B
DECK B/REC
ANALOG SWITCH (CHROME EQUALISATION)
7702 HEF4066 MC14066BCP
FE=0V
CR=10.2V
FE/CR
7705 DTC114ES
7706 DTC114ES
Deck A=10.3V
Deck B=0V
Deck B=9.3V
Rec=9V
Right 1706
Left 1708
CURRENT SENSOR FOR BIAS AND RECORD CALIBRATION
BIAS CHROME LEFT
BIAS CHROME RIGHT
Pb Rec Pb Rec
7704 UPC1330HA
HEADSWITCH
REC
5760
OSC COIL
BIAS OSCILLATOR
7750 BC337/40
7751 DTA144ES
7752 TBC548C
7754 TBC548C
BIAS FERRO
7753 DTC114ES
FE/CR SWITCH
8V FE 10.2V CR FE/CR
REC PRE-AMP LEFT
REC PRE-AMP RIGHT
5635 MPX FILTER
5636 MPX FILTER
DOLBY IC
7635
HA12134
PB IN
PB OUT
REC IN
REC OUT
SC
DET
RECORDING CURRENT LEFT ADJ.
RECORDING CURRENT RIGHT ADJ.
7641 TBC548C
7642 TBC548C
SW
REC
DOLBY
COPY
7653 DTC114ES
7767 TBC548C
7768 TBC548C
HS copy
HS/NS
FOR MOTOR HIGH SPEED CALIBRATION
7765 DTC114ES
7763 DTA144ES
7764 DTC114ES
PLAY B
PLAY A
REC
Fe/Cr
to 6708
to 6709
6708 1N4148
6709 1N4148
Play A
Play B
RECORDING EQUALIZER IC
7770 CXA1298AP
REC OUT
REC IN
AGC
Iref
REF & BIAS
AGC DETECTOR
FE/CR
REC MUTE
NS/HS
AGC TC
MIX IN
MIX OUT
BIAS TRAP
7776 DTC114ES
Vcc
Vref

ANALOG SWITCH
(DECK A/B SWITCH)

DOLBY IC
7635
HA12134

RECORDING EQUALIZER IC
7770
CXA1298AP

BIAS TRAP

BIAS FERRO

FE/CR SWITCH

MUTE

MOTOR NS ADJ.

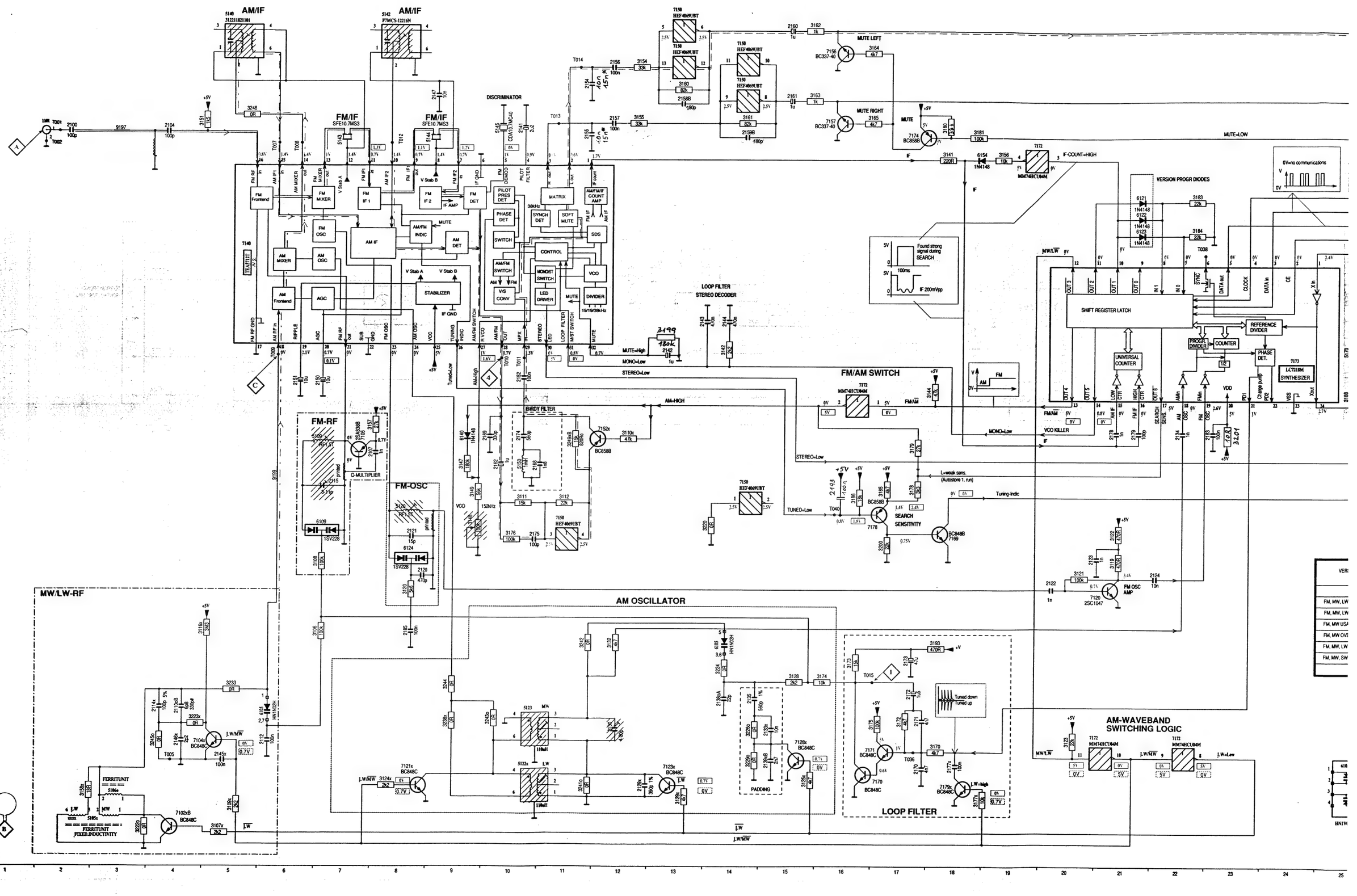
RDN12 tape transport

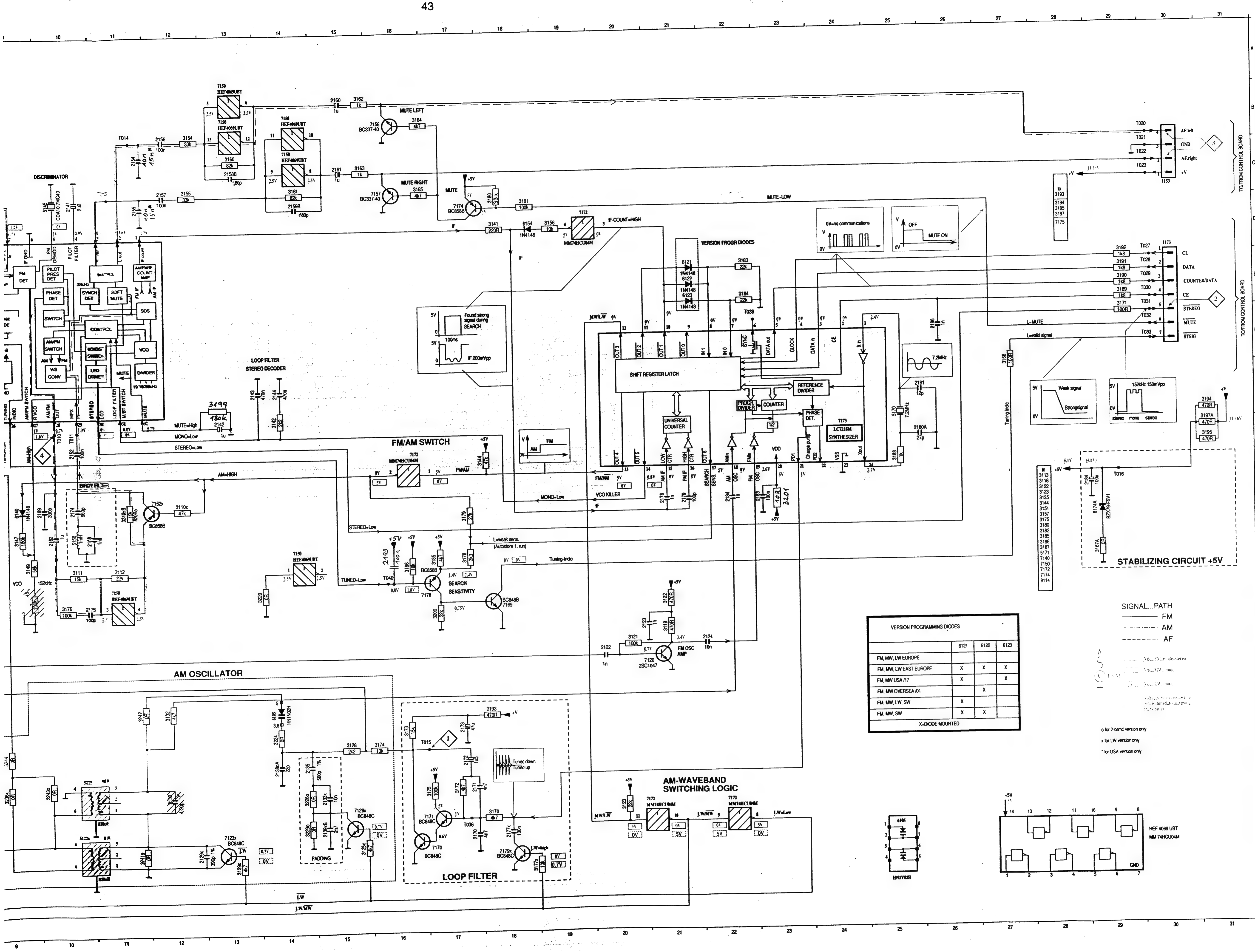
MOTOR
12 Volt

EVM

Signal path
Pb
REC

TUNER UNIT ECO4 (MIDI)





VERSION PROGRAMMING DIODES

	6121	6122	6123
FM, MW, LW EUROPE			
FM, MW, LW EAST EUROPE	X	X	X
FM, MW USA /17	X		X
FM, MW OVERSEA /01		X	
FM, MW, LW, SW	X		
FM, MW, SW	X	X	
X=DIODE MOUNTED			

1101 C2
1153 C30
1173 D30
2100 C2
2104 C4
2107 I8
2110o N4
2112 N6
2114x N4
2115 J7
2120 K8
2121 K8
2122 K20
2123 K20
2124 K22
2129x O12
2130 N12
2133x N15
2134 I22
2135 N14
2138o N14
2139x O15
2141 C10
2142 G13
2143 G13
2144 G14
2145x O5
2146x N4
2147 C9
2150 H7
2151 H6
2152 H10
2154 C11
2155 C11
2156 B12
2157 C12
2158B C13
2159B C14
2160 B15
2161 C15
2162 I10
2168 I10
2169 I10
2170 O17
2171 N17
2172 M17
2173 M17
2174 I10
2175 K10
2177x O18
2178 I21
2179 I21
2180A H25
2181 G25
2183 I23
2184 I29
2185 L8
2186 F26
3106 L7
3107x P5
3108 K7
3109x O5
3110x I12
3111 J10
3112 J11
3116x L4
3119 K21
3120 L8
3121 K20
3122 K21
3123 N20
3124x O8
3125x O15
3128 M15
3129x O13
3132 M12
3141 D18
3142 G14
3144 H18
3147 I9
3148 J9
3149 J9
3151 C4
3154 B12
3155 C12
3156 D19
3157 I7
3158x O2
3160 C13
3161 C14
3162 B15
3163 C15
3164 B16
3165 C16
3166 F27
3167A J29
3170 N18
3171 F29
3172 N17
3173 M16
3174 M16
3175 N17
3176 K10
3177x O18
3178 J17
3179 I17
3180 C18
3181 C18
3183 E22
3184 E22
3185 J17
3186 J16
3188 H25
3189 E29
3190 E29
3191 E29
3192 E29
3193 M18
3194 G31
3195 H31
3197A H31
3200 K17
3220 J14
3222o P3
3223x N4
3224 M14
3226o N14
3229o O14
3233 M5
3238x N9
3241o O11
3242 M11
3243o N10
3244 M9
3245o N4
3248 C5
3249x I11
5105x P2
5106o O3
5109 I7
5120 J8
5122x O10
5123 N10
5140 A5
5142 A8
5143 D7
5144 D9
5145 C10
5150 I10
5170 G25
5171 I23
6105 O25
6109 J7
6121 E21
6122 E21
6123 E21
6124 K8
6140 I9
6154 D18
6174A I29
7102x P4
7104x N5
7105 I7
7120 L20
7121x O8
7123x O13
7128x N15
7140 E5
7150 J14
7150 J11
7150 A13
7150 C14
7150 B14
7150 B13
7152x I12
7156 B16
7157 C16
7169 K18
7170 O17
7171 O17
7172 H16
7172 D20
7172 O20
7172 N22
7172 N20
7172 O22
7173 H24
7174 D17
7178 K16
7179x O18
9197 C3
9199 J6
T001 C2
T002 D2
T005 O4
T007 D6
T008 D6
T009 G6
T010 H10
T011 H10
T012 C8
T013 C11
T014 B11
T015 M16
T016 I29
T020 B29
T021 C29
T022 C29
T023 C29
T027 D30
T028 E30
T029 E30
T030 E30
T031 E30
T032 F30
T033 F30
T036 O17
T038 F22
T040 J16

2107 B 2 2144 C 3 2171 B 5 3110x C 3 3147 B 3 3175 B 5 3212 C 4 3238x A 5 6100 B 1 7171 B 5 T010 C 3 T028 E 5
2110o A 3 2145x A 3 2174 C 3 3111 D 3 3149 C 2 3176 C 3 3213 D 4 3240 D 5 6124 B 2 7172 C 4 T011 C 3 T029 D 5
2112 B 3 2146x A 3 2175 D 3 3112 D 3 3154 D 2 3178 C 5 3220 D 2 3241o A 5 7102x A 3 7173 C 5 T012 C 2 T030 D 5
2114x A 3 2147 C 2 2180 C 5 3116x A 3 3155 D 2 3179 C 5 3222o A 3 3242 B 4 7104x A 3 7174 D 4 T013 D 2 T031 E 5
2120 B 2 2152 C 3 2181 C 5 3121 B 3 3157 B 2 3180 D 4 3223x A 2 3243o A 5 7121x A 5 7178 C 5 T014 D 2 T032 E 5
2121 B 2 2154 C 2 2183 C 5 3122 B 3 3158x A 4 3183 D 5 3224 B 4 3244 A 4 7123x B 5 7179x A 5 T015 B 5 T033 D 5
2122 B 3 2155 C 2 2185 B 2 3123 C 4 3160 D 3 3184 D 5 3226o A 4 3245o A 3 7128x A 4 T001 A 1 T016 A 5 T035 B 5
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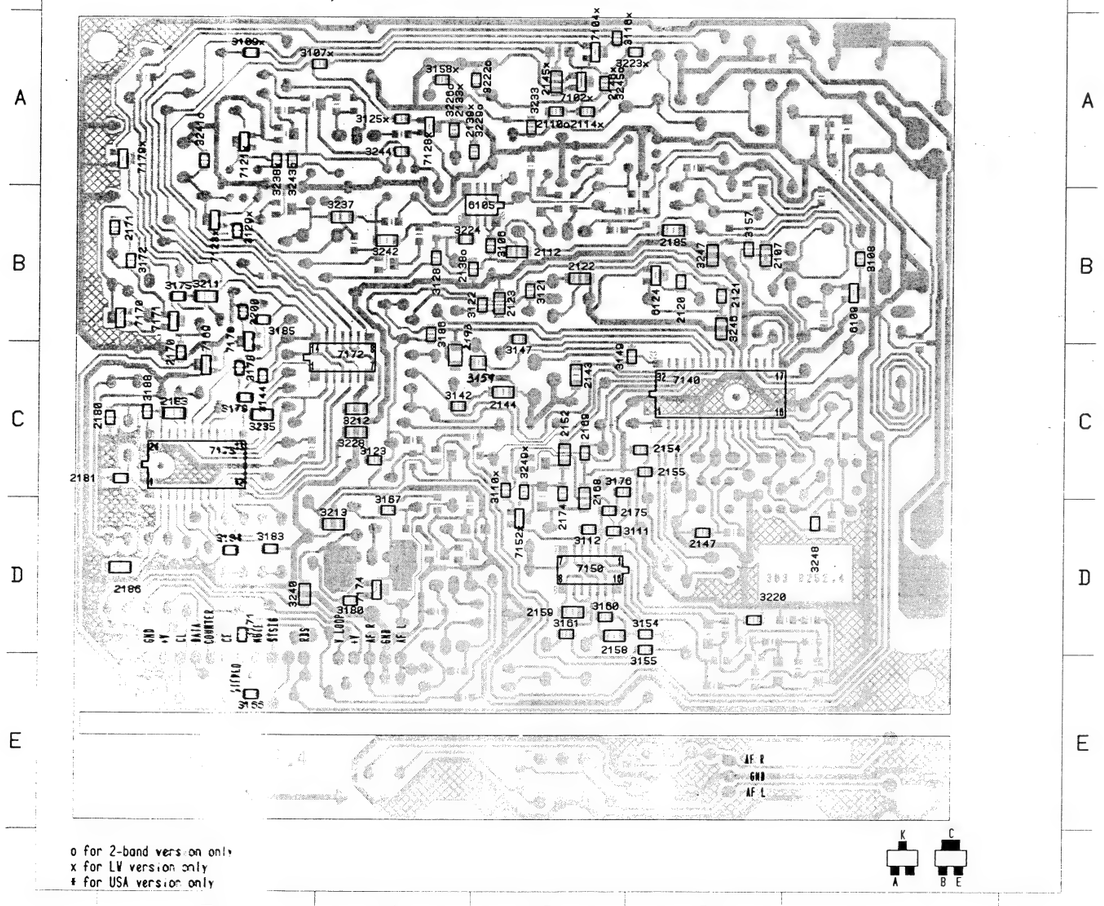
2143 C 3 2170 C 5 3169x A 5 3144 C 5 3172 B 5 3211 B 5 3237 B 4 6105 B 3 7170 B 5 T009 B 2 T027 E 5

5 4 3 2 1

ECO 4 TUNER BOARD / Copper side view



o for 2-band version only
x for LW version only
* for USA version only

5 4 3 2 1

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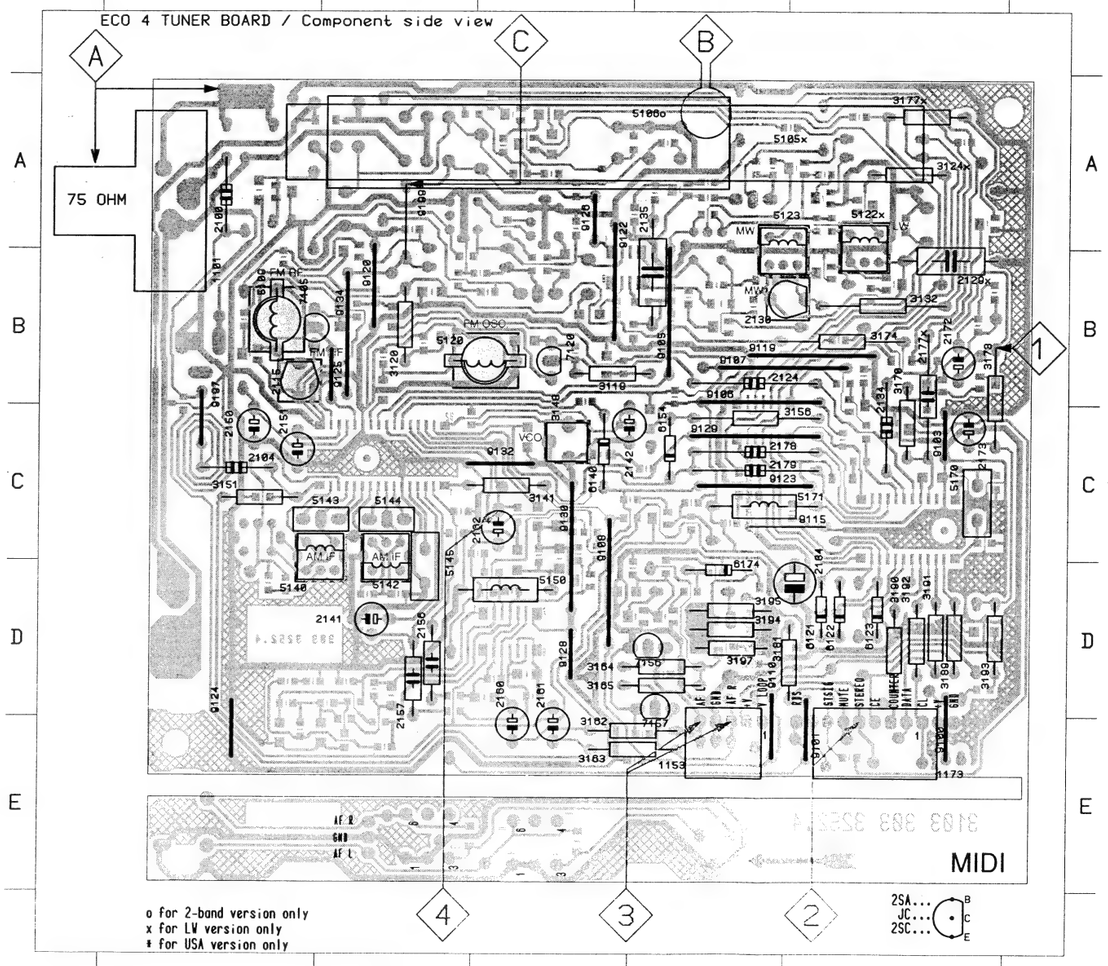
1153 E 4 2135 B 4 2162 C 3 3124x A 5 3165 D 4 3192 D 5 5122x A 5 5171 C 4 7156 D 4 9110 E 4 9128 D 3
1173 E 5 2141 D 2 2172 B 5 3132 B 5 3170 C 5 3193 D 5 5123 B 4 6121 D 5 7157 D 4 9115 C 5 9129 C 4
2100 A 1 2142 C 3 2173 C 5 3141 C 3 3173 B 5 3194 D 4 5140 C 2 6122 D 5 9100 E 5 9119 B 5 9130 C 3
2104 C 1 2150 C 1 2177x B 5 3148 C 3 3174 B 5 3195 D 4 5142 C 2 6123 D 5 9101 E 5 9120 B 2 9132 C 3
2115 B 1 2151 C 1 2178 C 4 3151 C 1 3177x A 5 3197 D 4 5143 C 2 6140 C 3 9103 C 5 9122 B 3 9134 B 2
2124 B 4 2156 D 2 2179 C 4 3156 C 4 3181 D 5 5105x A 4 5144 C 2 6154 C 4 9105 B 4 9123 C 4 9197 C 1
2129x B 5 2157 D 2 2184 D 5 3162 E 4 3189 D 5 5106o A 4 5145 D 2 6174 D 4 9106 B 4 9124 E 1 9199 A 2
2130 B 4 2160 E 3 3119 B 3 3163 E 4 3190 D 5 5109 B 1 5150 D 3 7105 B 1 9107 B 4 9125 B 2

1 2 3 4 5

ECO 4 TUNER BOARD / Component side view



o for 2-band version only
x for LW version only
* for USA version only

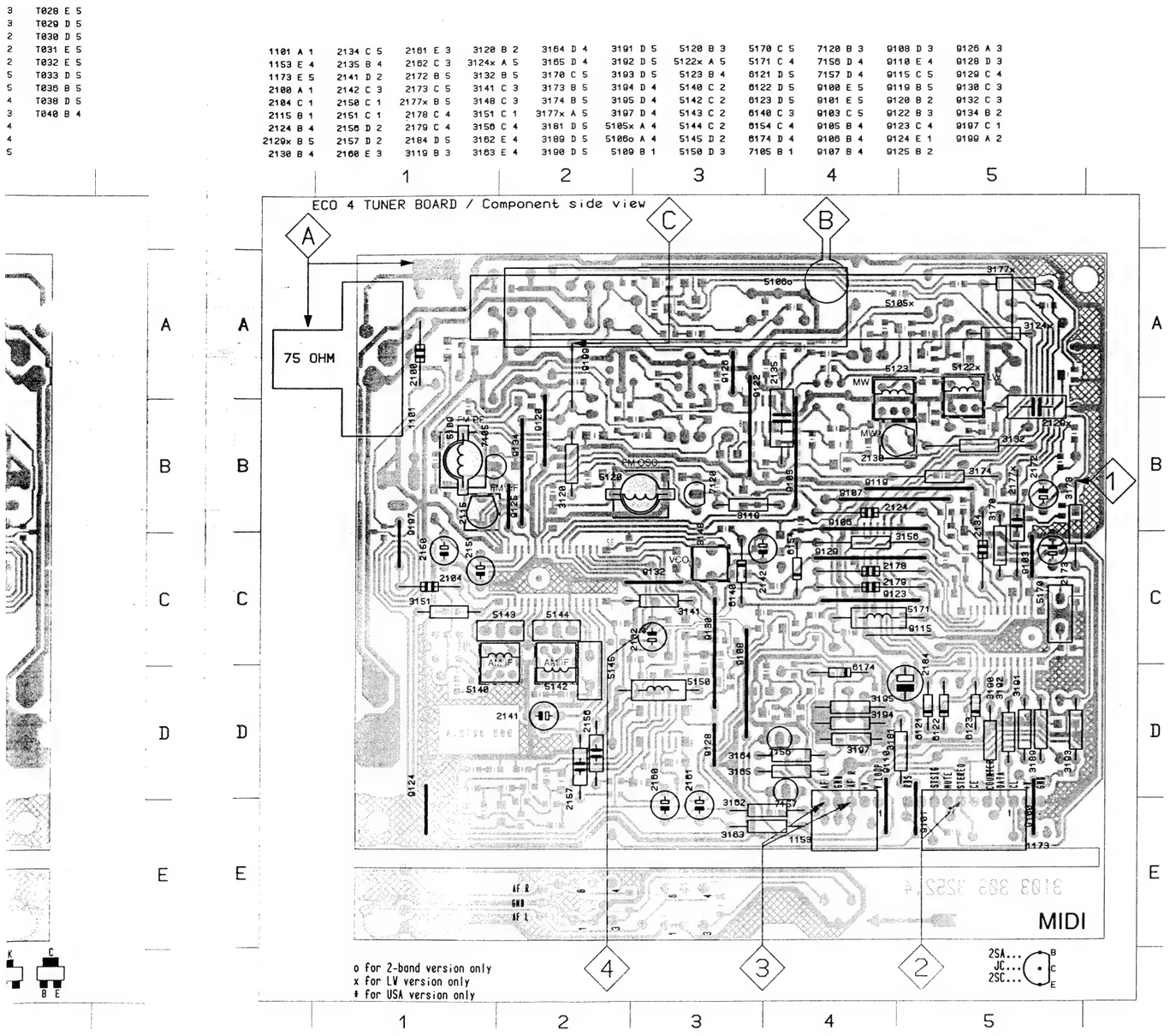
1 2 3 4 5

TUNER Adjustme

Waverange
VARICAP ALIGNMEN
FM /00/01/05/10/17 87.5 - 108MHz
FM /14 East Europe 65.81 - 108MHz
MW /01/17 2-band version, 10kHz grid 530 - 1710kHz
LW /00/05/10/14 153 - 279kHz
MW /00/05/10/14 522 - 1611kHz
FM - RF
FM /00/01/05/10/17
FM /14 East Europe
VCO
FM
AM - IF
MW
AM - RF
LW
MW /00/05/10/14 3-band version
MW /01/17 2-band version

* Use Service Test Prog
[1] Adjustment of AM-RF brackets after AM-RF

repeat



TUNER Adjustment table (ECO 4 FM/MW- and FM/MW/LW - versions with AM-ferrite antenna)

Waverange	Input frequency	Input	Set tuned to	Adjust	Output	Scope / Voltmeter
VARICAP ALIGNMENT * 1)						
FM /00/01/05/10/17			108 MHz	5120	1	8V ± 0.2V
87.5 - 108MHz			87.5MHz	check		4.1V ± 0.5V
FM /14 East Europe			108 MHz	5120		8V ± 0.2V
65.81 - 108MHz			65.81 MHz	check		0.8V ± 0.4V
MW /01/17			1710kHz	5123		9V±0.1V (7.5±0.7V) 1)
2-band version, 10kHz grid 530 - 1710kHz			530kHz	check		1V±0.4V (1.1±0.5V) 1)
LW /00/05/10/14			279kHz	5122		8V±0.2V (7.5±1.5V) 1)
153 - 279kHz			153kHz	check		1V±0.4V (1.1±0.5V) 1)
MW /00/05/10/14			1611kHz	5123		8V±0.1V (7.5±0.5V) 1)
522 - 1611kHz			522kHz	check		1V±0.4V (1.1±0.5V) 1)
FM - RF						
FM /00/01/05/10/17	108MHz	A mod=1kHz Δf=22.5kHz	108MHz	2115	3	MAX ↕
	87.5MHz		87.5MHz	5109		
FM /14 East Europe	108MHz		108MHz	2115		
	65.81MHz		65.81MHz	5109		
VCO						
FM	98 MHz, 1mV continuous wave	A	98MHz	3148	2	152kHz ± 1kHz
AM - IF						
MW	540kHz Δf = 10kHz as low as possible	100nF 50E C	540kHz	5142 5140	4	symmetrical and max height
AM - RF						
LW	198kHz	B mod=1kHz 30% AM	198kHz	5122	4	MAX
MW /00/05/10/14 3-band version	1494kHz		1494kHz	2130		MAX ↕
	549kHz		549kHz	5123		
MW /01/17 2-band version	1500kHz		1500kHz	2130		
	550kHz		550kHz	5123		

* Use Service Test Program. By selecting the TUNER TEST, test frequencies will be stored as preset frequ. automatically.

1) Adjustment of AM-RF stage influences the varicap voltage. Therefore check if varicap voltage fulfils value stated within brackets after AM-RF adjustment.

↕ repeat

TUNER 92

FM-FRONTEND

FM-IF

AM-IF

FM-DETECTOR

AM-FRONTEND

AM-OSC

FERROCEPTOR

AM Frame antenne

ANTI BIRDY FILTER

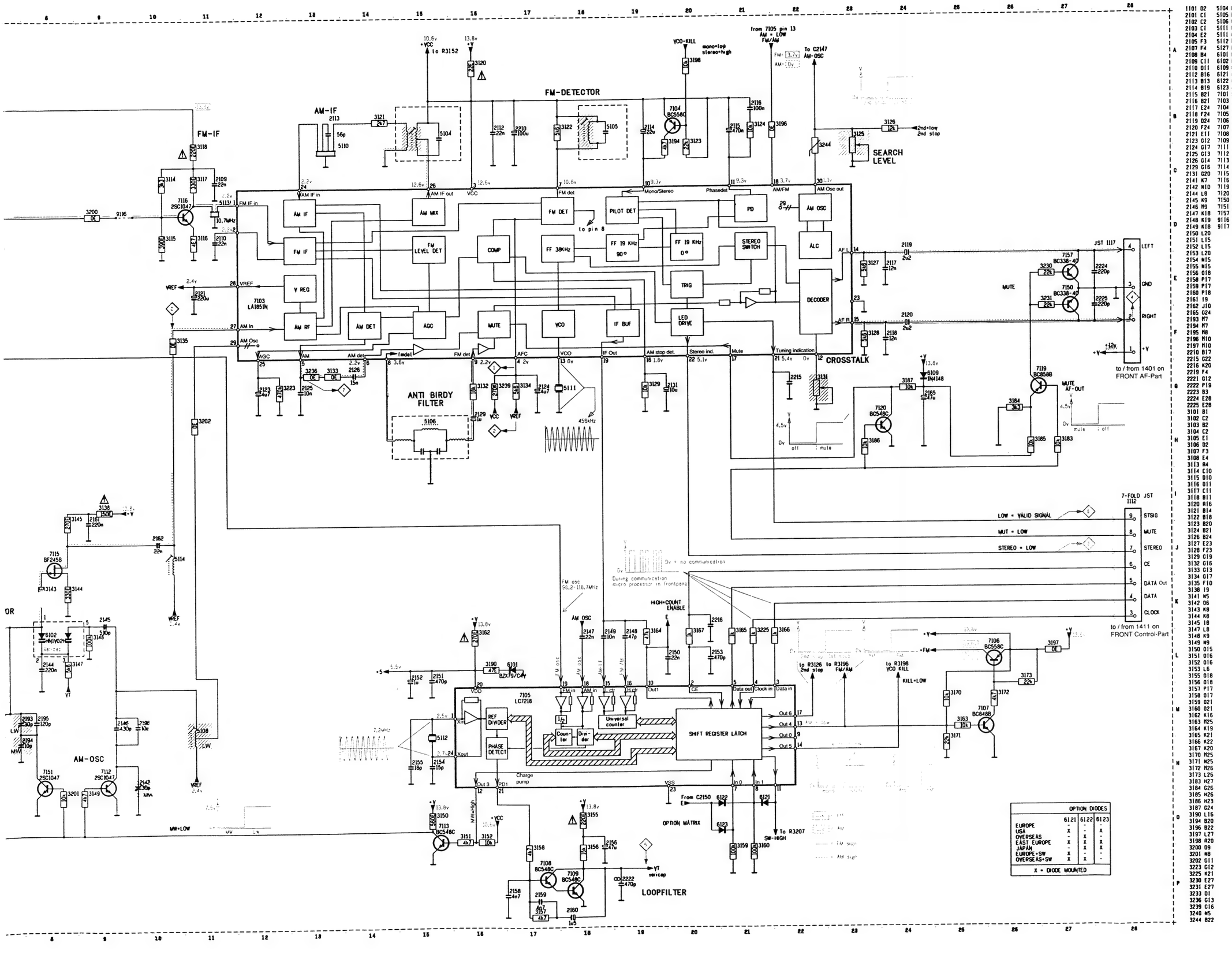
LOOPFILTER

CROSSTALK

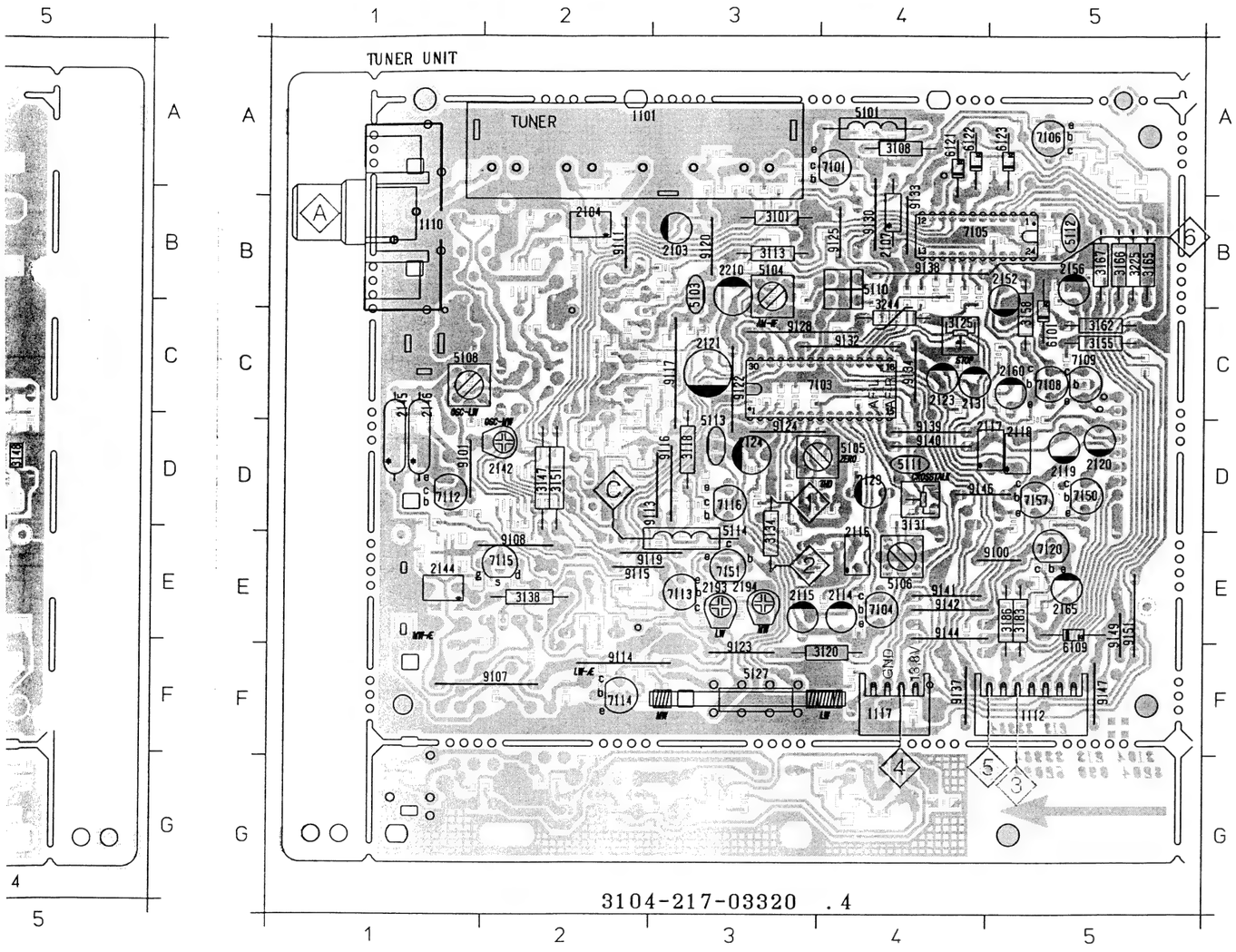
Varicap voltage

FM :	108MHz	7-9v
FM :	87.5MHz	1.3-2v
LW :	279KHz	8.5v +-0.1v
LW :	153kHz	1v +-0.3v
MW :	1611kHz	8.5v +-0.1v
MW :	522kHz	1.1v +-0.3v

ES. 3104-217-03320. SERV. ES-UNIT



1101 D2 5104 B15
2101 C1 5105 B18
2102 C2 5106 H15
2103 C1 5111 D18
2104 E2 5111 G18
2105 F3 5112 M15
2107 F4 5127 K7
2108 B4 6101 L17
2109 C11 6102 K8
2110 D11 6109 G24
2112 B16 6121 O21
2113 B13 6122 O21
2114 B19 6123 O21
2115 B21 7101 F4
2116 B21 7103 E12
2117 E24 7104 B20
2118 F24 7105 M17
2119 D24 7106 L26
2120 F24 7107 M25
2121 E11 7108 P17
2123 G12 7109 P18
2124 G17 7111 O5
2125 G13 7112 M9
2126 G14 7113 O15
2129 G16 7114 M6
2131 G20 7115 J8
2141 K7 7116 C11
2142 M10 7119 G27
2144 L8 7120 G24
2145 K9 7150 E27
2146 M9 7151 M8
2147 K18 7157 E27
2148 K19 9116 D9
2149 K18 9117 D5
2150 L20
2151 L15
2152 L15
2153 L20
2154 M15
2155 M15
2156 O18
2158 P17
2159 P17
2160 P18
2161 I9
2162 J10
2165 G24
2193 M7
2194 M7
2195 M8
2196 M10
2197 M10
2210 B17
2215 G22
2216 K20
2219 F4
2221 G12
2222 P19
2223 B3
2224 E28
2225 E28
3101 B1
3102 C2
3103 B2
3104 C2
3105 E1
3106 D2
3107 F3
3108 E4
3113 A4
3114 C10
3115 D10
3116 D11
3117 C11
3118 B11
3120 A16
3121 B14
3122 B18
3123 B20
3124 B21
3126 B24
3127 E23
3128 F23
3129 G19
3132 G16
3133 G13
3134 G17
3135 F10
3136 I9
3141 M5
3142 O6
3143 K8
3144 K8
3145 I8
3147 L8
3148 K9
3149 N9
3150 O15
3151 O16
3152 O16
3153 L6
3155 O18
3156 O18
3157 P17
3158 O17
3159 O21
3160 O21
3162 K16
3163 M25
3164 K19
3165 K21
3166 K22
3167 K20
3170 M25
3171 M25
3172 M26
3173 L26
3183 H27
3184 G26
3185 H26
3186 H23
3187 G24
3190 L16
3194 B20
3196 B22
3197 L27
3198 R20
3200 D9
3201 M8
3202 G11
3223 G12
3225 K21
3230 E27
3231 E27
3233 D1
3236 G13
3239 G16
3240 M5
3244 B22

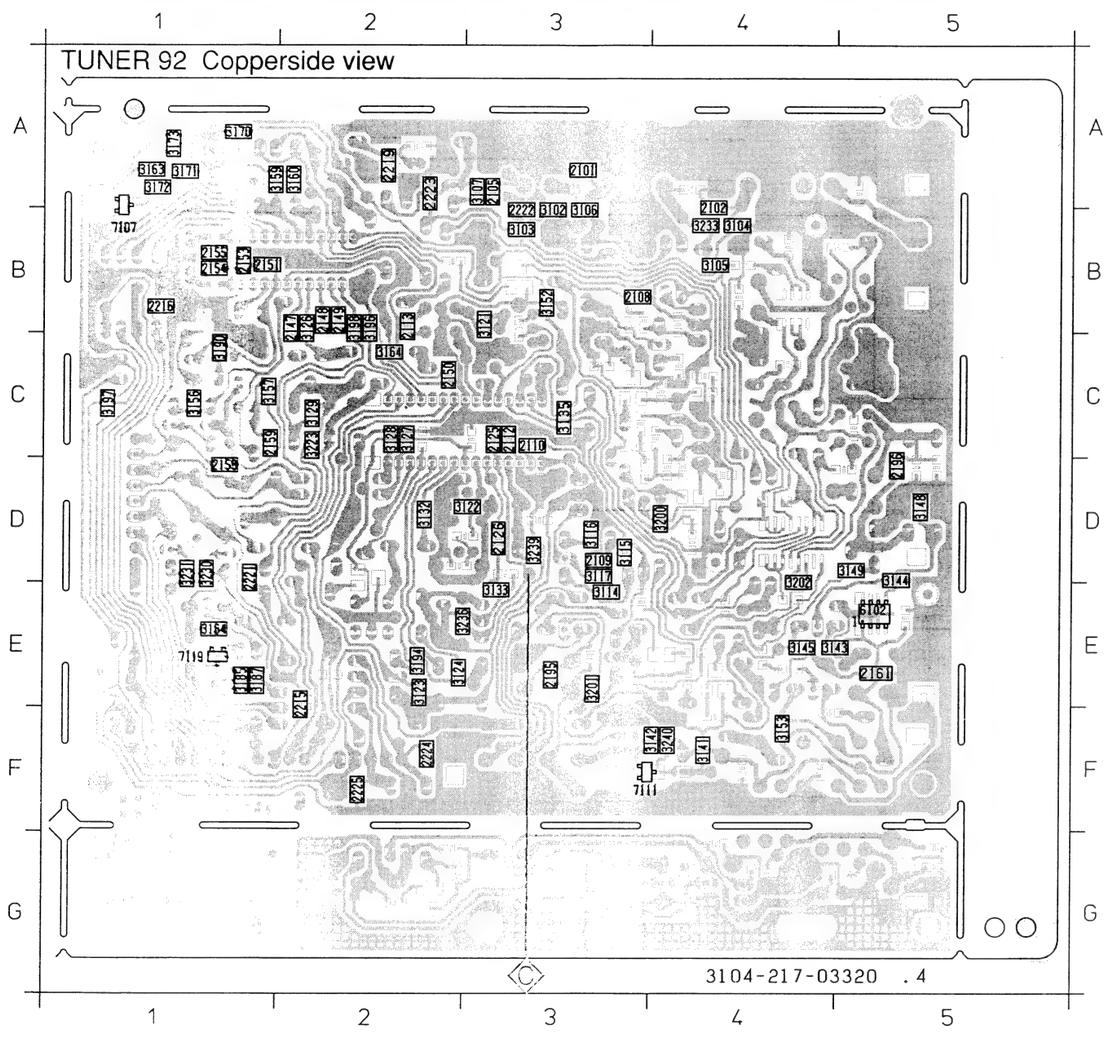


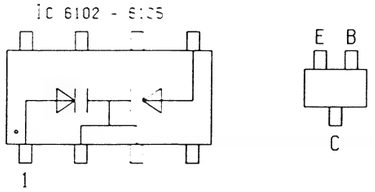
TUNER 92 Adjustment table (FM, MW - and FM, MW, LW - versions with AM ferrite antenna)

Waverange	Input frequency	Input	Set tuned to	Adjust	Output	Scope / Voltmeter
VARICAP ALIGNMENT						
FM			108 MHz	check		7....9V
87.5 - 108MHz			87.5MHz	check		1.3....2V
AM 2-band version, 10kHz grid			1710kHz	5108		8.5V ± 0.1V
530 - 1710kHz			530kHz	check	◇6	1V ± 0.3V
LW			279kHz	5108		8.5V ± 0.1V
153 - 279kHz			153kHz	check		1V ± 0.1V
MW			1611kHz	2142		8.5V ± 0.1V
522 - 1611kHz			522kHz	check		1.1V ± 0.3V
FM IF						
FM	98 MHz, 1mV mod = 1kHz Δf = 75kHz	◇A	98MHz	5105	◇1 ◇2	0V ± 20mV
STEREO CROSSTALK						
FM	98 MHz, 1mV 90% Left +9% pilot	◇A	98MHz	check	◇3	low < 1V
				3131	◇4	Right channel minimum
SEARCH SENSITIVITY						
FM	98 MHz, 15µV mod = 1kHz Δf = 75kHz	◇A	98MHz	3125	◇5	Switches just from High to Low
AM - IF						
MW	1494kHz Δf = 10kHz as low as possible	100nF 50E ◇C	1494kHz	5104	◇7	symmetrical and max height
AM RF						
AM 2-band version, 10kHz grid m=30%, 1kHz	560kHz	◇B	560kHz	5107	◇7	MAX. ↕
	1600kHz		1600kHz	2141		
LW m=30%, 1kHZ	155kHz		155kHz	5127 LW		
	270kHz		270kHz	2193		
MW m=30%, 1kHz	558kHz		558kHz	5127 MW		
	1494kHz		1494kHz	2194		

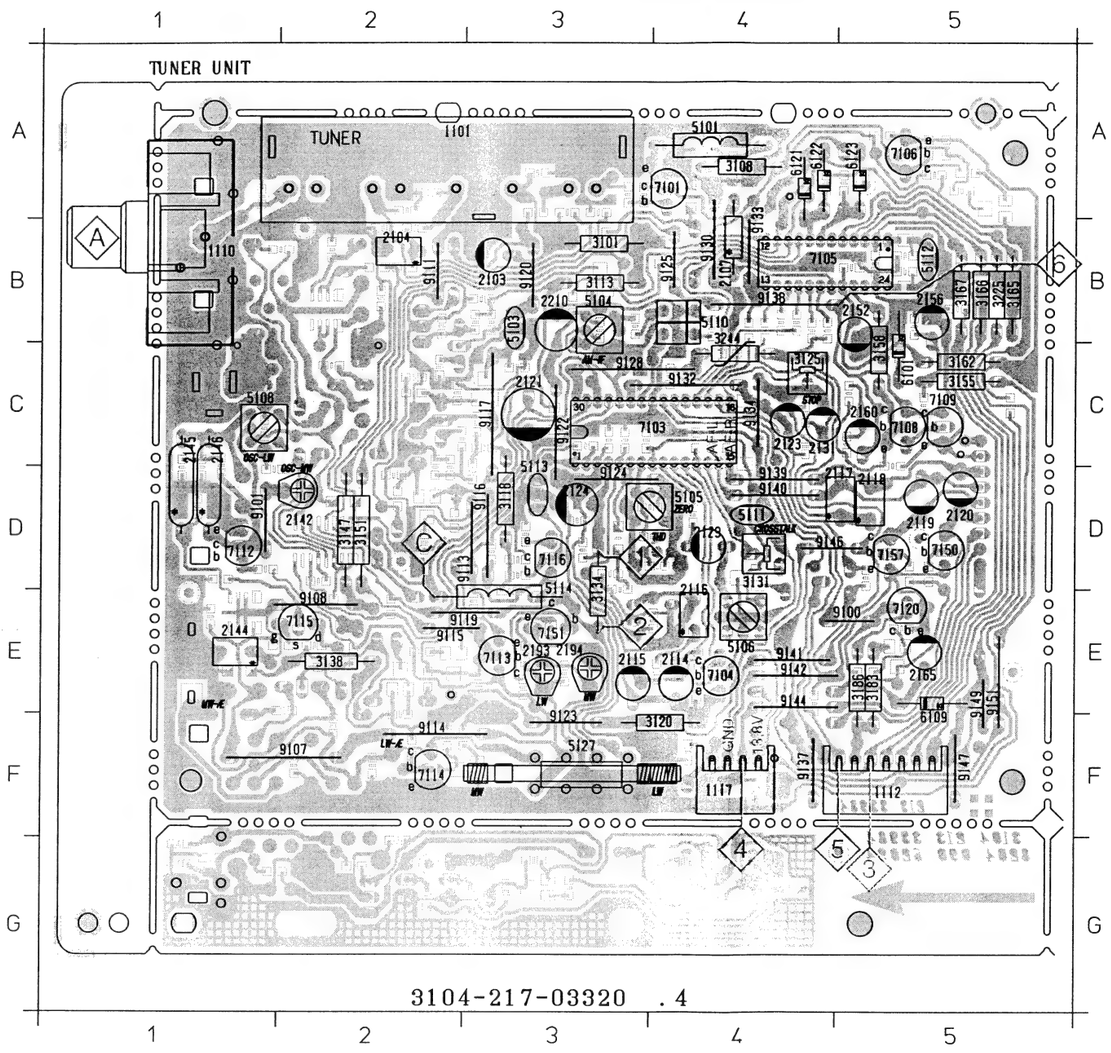
↕ repeat

2101 A3	2125 C3	2154 B1	2216 B1	3103 B3	3117 D3	3129 C2	3145 E4	3160 A2	3185 E1	3201 E3	3240 F4			
2102 B4	2126 D3	2155 B1	2219 A2	3104 B4	3121 B3	3132 D2	3148 D5	3163 A1	3187 E1	3202 E4	6102 E5			
2105 A3	2147 B2	2158 D1	2221 D1	3105 B4	3122 D3	3133 E3	3149 D5	3164 C2	3190 C1	3223 C2	7107 B1			
2108 B3	2148 B2	2159 C1	2222 B3	3106 B3	3123 E2	3135 C3	3152 B3	3170 A1	3194 E2	3230 D1	7111 F3			
2109 D3	2149 B2	2161 E5	2223 A2	3107 A3	3124 E3	3141 F4	3153 F4	3171 A1	3196 B2	3231 D1	7119 E1			
2110 C3	2150 C2	2195 E3	2224 F2	3114 E3	3126 B2	3142 F4	3156 C1	3172 A1	3197 C1	3233 B4	TUNER A1			
2112 C3	2151 B1	2196 D5	2225 F2	3115 D3	3127 C2	3143 E5	3157 C1	3173 A1	3198 B2	3236 E3				
2113 B2	2153 B1	2215 E2	3102 B3	3116 D3	3128 C2	3144 E5	3159 A2	3184 E1	3200 D4	3239 D3				





1101 A2	2119 D5	2156 B5	3131 D4	3186 E5	5113 D3	7106 A5	9100 E5	9122 C3	9140 D4					
1110 B1	2120 D5	2160 C5	3134 D3	3225 B5	5114 E3	7108 C5	9101 D1	9123 F3	9141 E4					
1112 F5	2121 C3	2165 E5	3138 E2	3244 C4	5127 F3	7109 C5	9107 F2	9124 D3	9142 E4					
1117 F4	2123 C4	2193 E3	3147 D2	5101 A4	6101 C5	7112 D1	9108 E2	9125 B4	9144 E4					
2103 B3	2124 D3	2194 E3	3151 D2	5103 B3	6109 F5	7113 E3	9111 B2	9128 C3	9146 D4					
2104 B2	2129 D4	2210 B3	3155 C5	5104 B3	6121 A4	7114 F2	9113 D3	9130 B4	9147 F5					
2107 B4	2131 C4	3101 B3	3158 C5	5105 D4	6122 A4	7115 E2	9114 F2	9132 C4	9149 E5					
2114 E4	2142 D2	3108 A4	3162 C5	5106 E4	6123 A5	7116 D3	9115 E2	9133 B4	9151 E5					
2115 E3	2144 E1	3113 B3	3165 B5	5108 C1	7101 A4	7120 E5	9116 D3	9134 C4						
2116 E4	2145 C1	3118 D3	3166 B5	5110 B4	7103 C4	7150 D5	9117 C3	9137 F4						
2117 D5	2146 C1	3120 F4	3167 B5	5111 D4	7104 E4	7151 E3	9119 E3	9138 B4						
2118 D5	2152 B5	3125 C4	3183 E5	5112 B5	7105 B4	7157 D5	9120 B3	9139 D4						

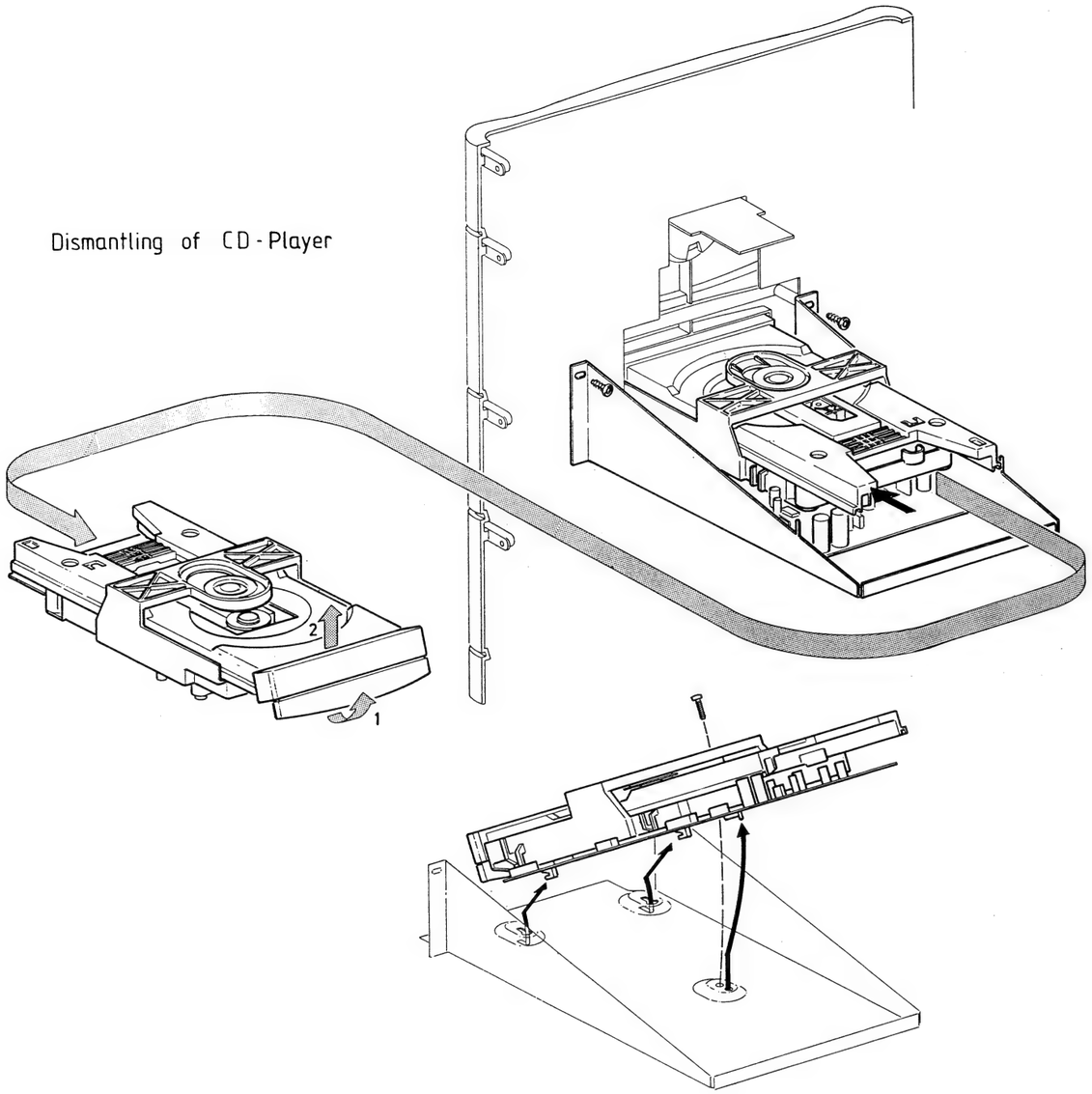


TUNER 92 Adj

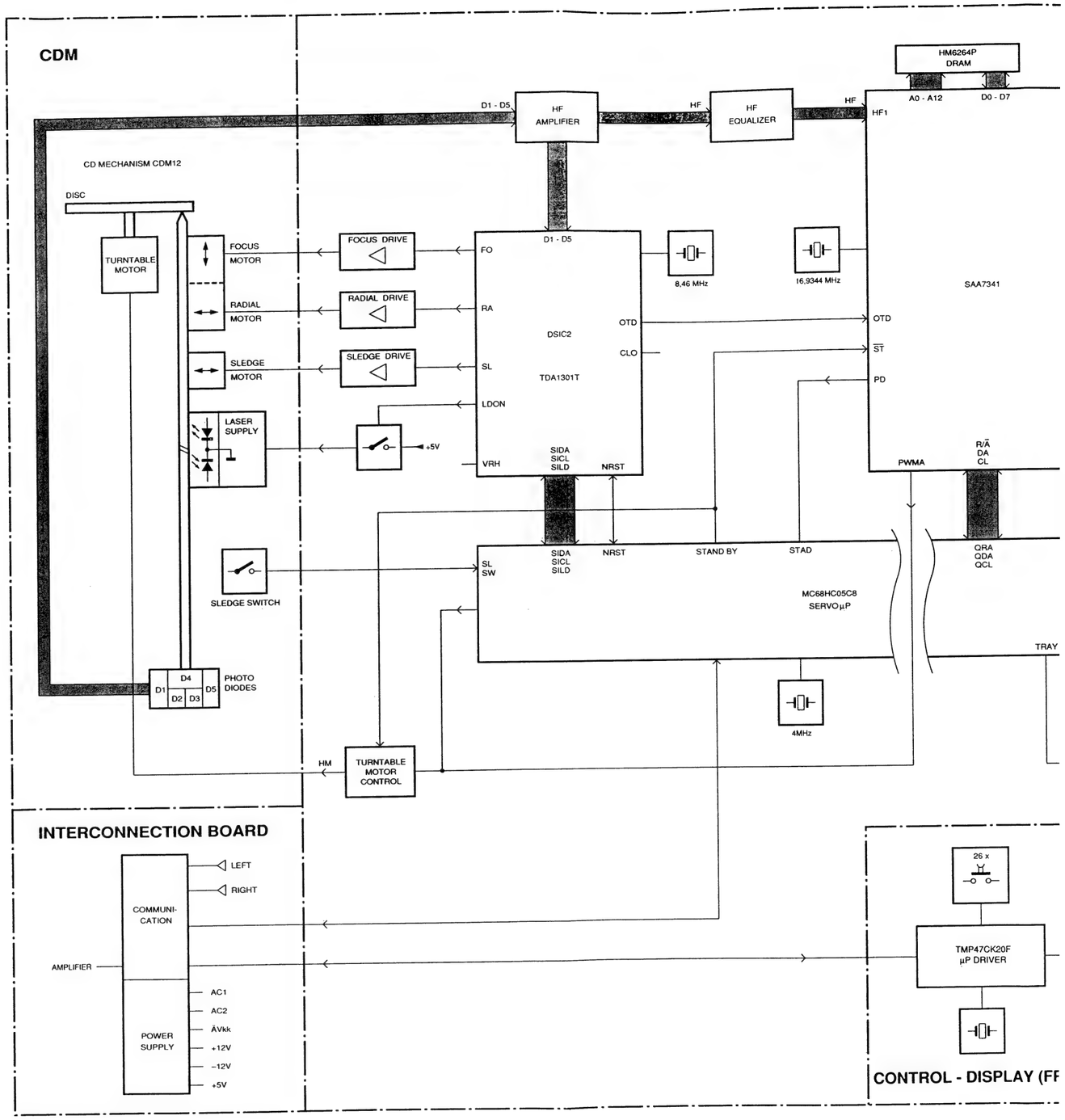
Waverange	
VARICAP ALIGNM	
FM	87.5 - 108MHz
AM 2-band version, 10kHz grid	530 - 1710kHz
LW	153 - 279kHz
MW	522 - 1611kHz
FM IF	
FM	
STEREO CROSS	
FM	
SEARCH SENSIT	
FM	
AM - IF	
MW	
AM RF	
AM 2-band version, 10kHz gri	m=30%, 1kHz
LW	m=30%, 1kHZ
MW	m=30%, 1kHz

repeat

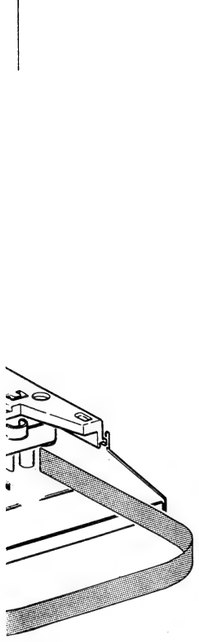
Dismantling of CD-Player

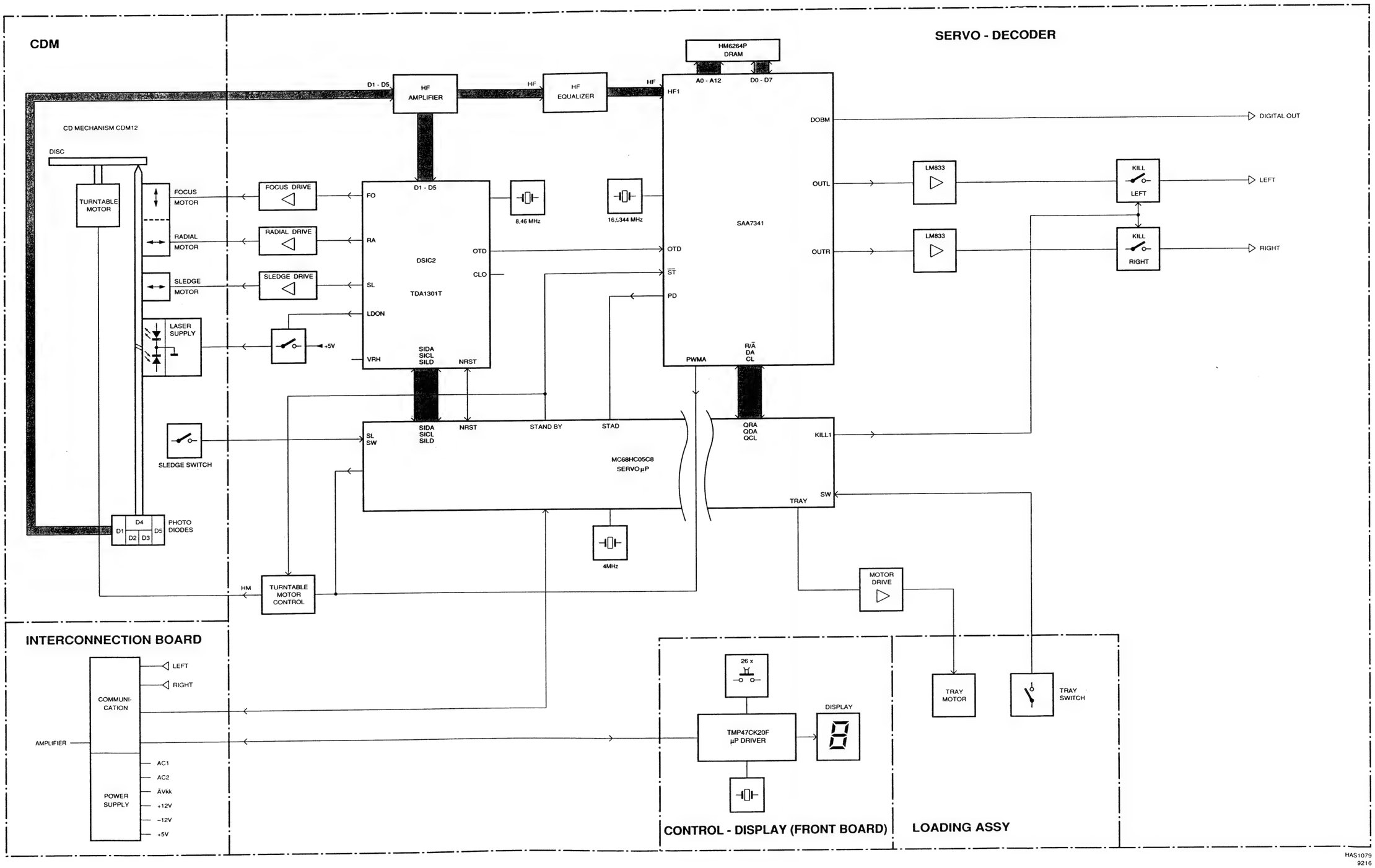


BLOCK DIAGRAM



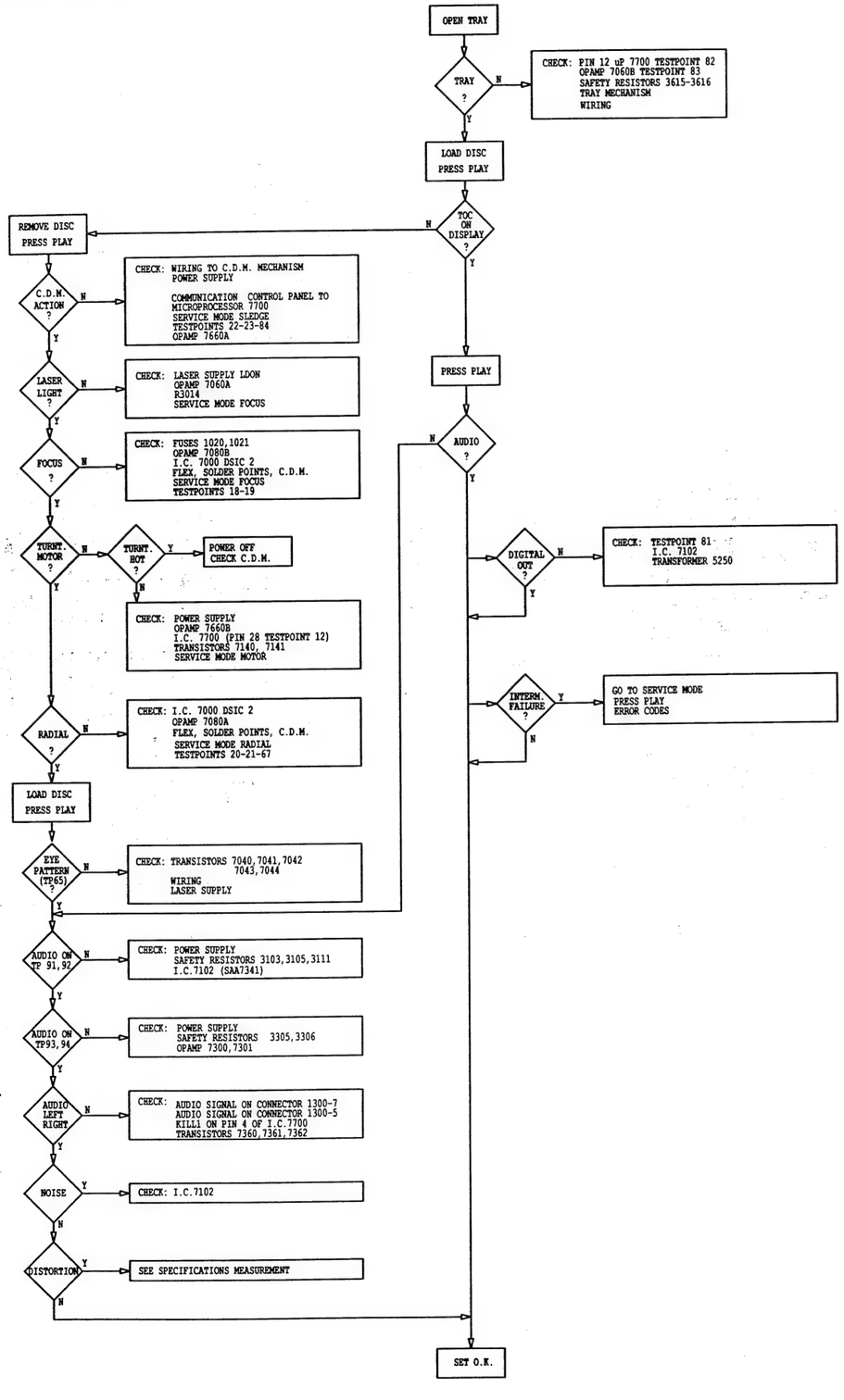
BLOCK DIAGRAM





HAS1079
9216

FAULTFINDING TREE



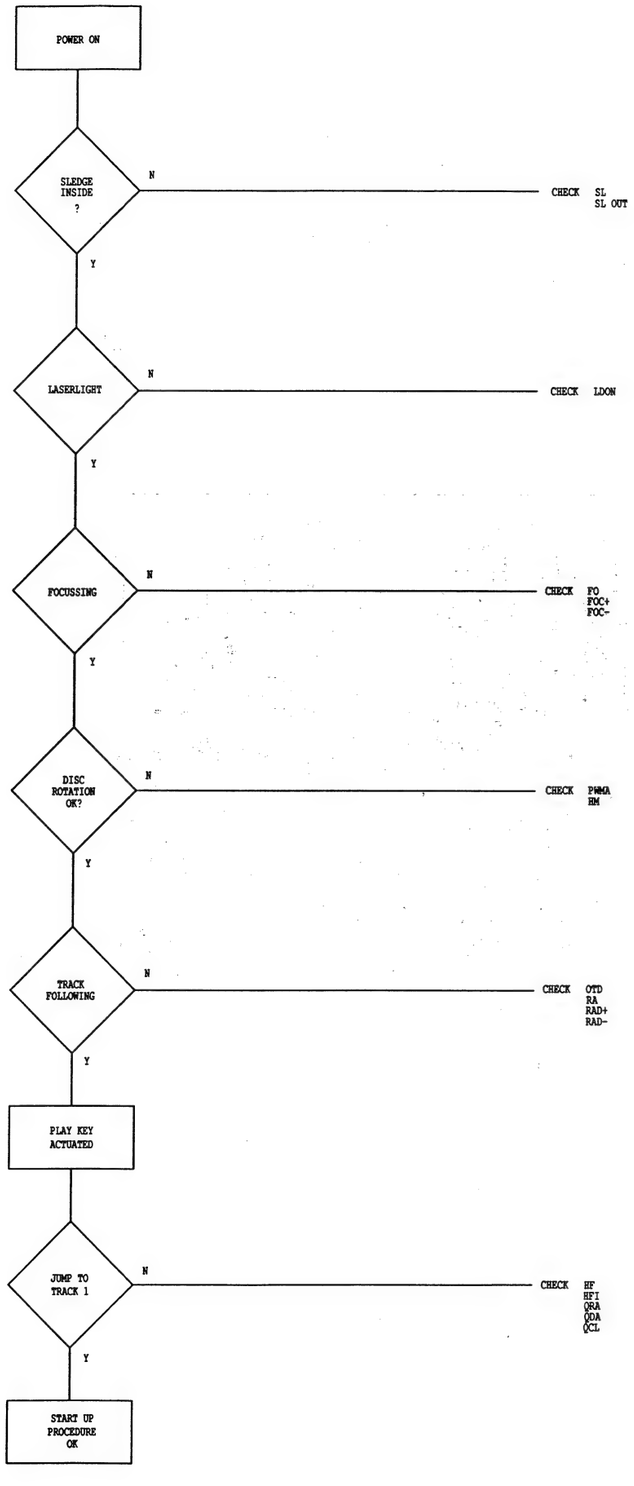
HAS1081
9218

ABBREVIATIONS

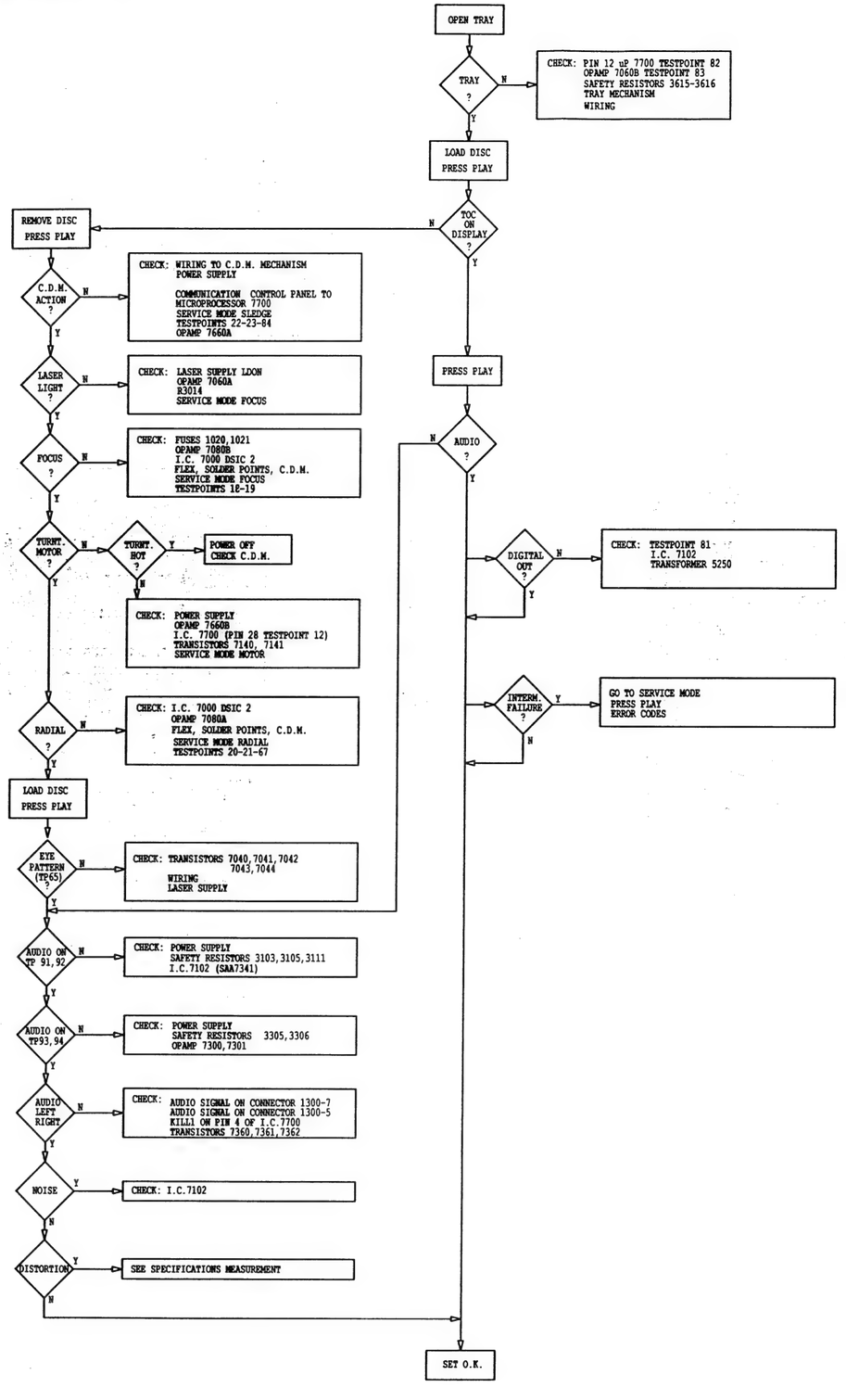
A0-A12	: Address outputs to external RAM
AM*	: Additional mute
CFB	: Data slicer feedback output to capacitor
CL	: Microprocessor interface clock input
CLO	: Clock output
D0-D7	: Data inputs/outputs to external RAM
D1-D4	: Central diode signal input
DA	: Microprocessor interface data input/output line
DE1L	: Pin 1 for external de-emphasis capacitor and resistor
DE1R	: Pin 1 for external de-emphasis capacitor and resistor
DE2L	: Pin 2 for external de-emphasis capacitor and resistor
DE2R	: Pin 2 for external de-emphasis capacitor and resistor
DEEM	: Output for external de-emphasis switches
DOBM	: Digital audio output
FO	: Focus actuator output
HFD	: High frequency detector
HFI*	: Inverting data slicer input
HFI	: Non-inverting data slicer input
HM	: Motor control signal
IREF	: Current reference output
KO*	: Kill out
KTC	: Kill time capacitor connection
LDON	: Laser drive on
MACC	: Motor accelerate signal
MBRA	: Motor brake signal
MHAL	: Hall effect detector for motor
NRST	: Reset input
OC	: VCO control
OTD	: Off track detector
OUTL	: Left channel output
OUTR	: Right channel output
PD	: Phase detector
PWMA	: Pulse width modulated motor control acceleration
PWMB	: Pulse width modulated motor brake signal
R/A	: Request/acknowledge
SD1-5	: Photodiode signals
SICL	: Serial interface clock
SIDA	: Serial interface data
SILD	: Serial interface load
SL	: Sledge output
ST*	: Standby mode
TS1-TS2	: Test input
VddA	: Power supply analog part
VddD	: Power supply digital part
VRH	: Reference input for A/D converter
VRL	: Reference input for A/D converter
VssA	: Ground analog part
VssD	: Ground digital part
WE	: Write enable
XIN	: Crystal oscillator input
XOUT	: Output to clock crystal
XTLI	: Oscillator input
XTLO	: Oscillator output
XTLR	: Oscillator reference

* log. 0-active !

START-UP PROCEDURE



FAULTFINDING TREE



CD COMPONENT AND CHIP LAYOUT

1002	D10	2008	F10	2050	G10	2101	E3	2122	G4	2502	C2	3010	F9	3052	I9	3075	I6	3140	E12	3310	D5	3552	C7	3711	C8	4106	F2	7080	H8	9007	B6	9027	C10	9049	D8
1010	F5	2009	E10	2051	G10	2102	E3	2123	F4	2503	B2	3011	E10	3053	H9	3080	E11	3141	D11	3311	D5	3553	C5	3713	C8	4107	F3	7101	I3	9008	B6	9028	C11	9050	C5
1011	H5	2010	F12	2052	G9	2103	I4	2125	E4	2504	C2	3012	E12	3054	H9	3081	H7	3142	D9	3312	C4	3610	F7	3714	C7	4108	F4	7102	G3	9009	B6	9029	B11	9051	E2
1020	F6	2011	D10	2060	C12	2104	I3	2140	C10	2550	C6	3013	D12	3055	G9	3082	G7	3143	C10	3313	C5	3611	D7	3715	C8	4109	I4	7140	D9	9010	F3	9031	D11	9052	E2
1021	H5	2012	C12	2061	B11	2105	E3	2141	D9	2610	F7	3014	F7	3056	G10	3085	I6	3144	E8	3314	C4	3612	F7	3716	C7	4200	I5	7141	D9	9011	F4	9032	E11	9053	D5
1052	F9	2015	F7	2062	C12	2106	F3	2253	E2	2611	F6	3015	D10	3057	G10	3086	E9	3146	E6	3315	C5	3613	G7	3717	C8	4302	C4	7300	D3	9012	E5	9033	E12	9054	D11
1070	B12	2016	E12	2063	C12	2107	E4	2300	D4	2612	B8	3016	I5	3058	H9	3087	H7	3147	D9	3320	D4	3614	E7	3718	C7	4600	F7	7301	D5	9013	E6	9034	E12	9055	D3
1071	B6	2017	E12	2064	D12	2108	F3	2301	D4	2702	B6	3017	F10	3060	D11	3100	E4	3148	D9	3321	D4	3615	F6	3719	C8	4700	C6	7360	C3	9014	D6	9035	E11	9056	D4
1250	D2	2018	E12	2065	C12	2109	E4	2302	D3	2703	B7	3040	H8	3061	D12	3101	F3	3255	F2	3322	D4	3616	E6	3720	C9	4701	C9	7361	C5	9015	D6	9036	G10	9057	E4
1300	B4	2019	B12	2066	C10	2110	F3	2303	D3	2704	C9	3041	I11	3062	D12	3102	E4	3256	E3	3323	C4	3617	B8	3721	C9	5250	E2	7362	C3	9016	D6	9037	G10		
1500	B3	2040	H9	2070	D10	2111	E3	2304	C6	3000	F11	3042	H10	3063	D12	3103	E4	3300	E4	3325	C5	3662	C4	3722	C7	6103	E3	7500	C3	9017	E6	9038	I8		
1570	H4	2041	H10	2071	F8	2112	G2	2305	D3	3001	F11	3043	H10	3064	C10	3105	I5	3301	D4	3326	D5	3663	C4	3723	C8	6550	B6	7550	D7	9018	D7	9039	I7		
1700	B7	2042	H10	2072	H7	2114	I4	2306	D3	3002	F11	3044	I10	3065	B12	3106	E5	3302	E4	3327	C5	3664	C4	3724	C8	6660	C4	7660	C11	9019	D7	9040	H6		
2000	G10	2043	I9	2080	G8	2115	H4	2309	D5	3003	F11	3045	I10	3066	B10	3109	E3	3303	E3	3328	C5	3665	C4	4000	B12	7000	E11	7700	C8	9020	D8	9041	H6		
2001	F10	2044	I10	2081	H7	2116	I4	2310	D5	3004	F10	3046	I11	3067	B10	3110	H5	3304	E3	3360	C4	3700	C7	4001	G6	7040	I11	9000	C2	9021	D8	9043	I5		
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2004	F11	2046	G9	2083	I8	2118	G5	2312	C4	3006	E8	3048	I10	3071	E11	3112	E4	3306	C3	3501	C2	3706	C9	4003	I12	7042	I10	9003	D5	9023	E8	9045	G6		
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2008	F10	2049	G9	2086	D10	2121	F4	2501	D3	3009	E10	3051	I9	3074	G7	3119	E6	3309	D5	3551	D6	3710	C7	4105	C11	7060	E7	9006	B6	9026	C10	9048	E7		

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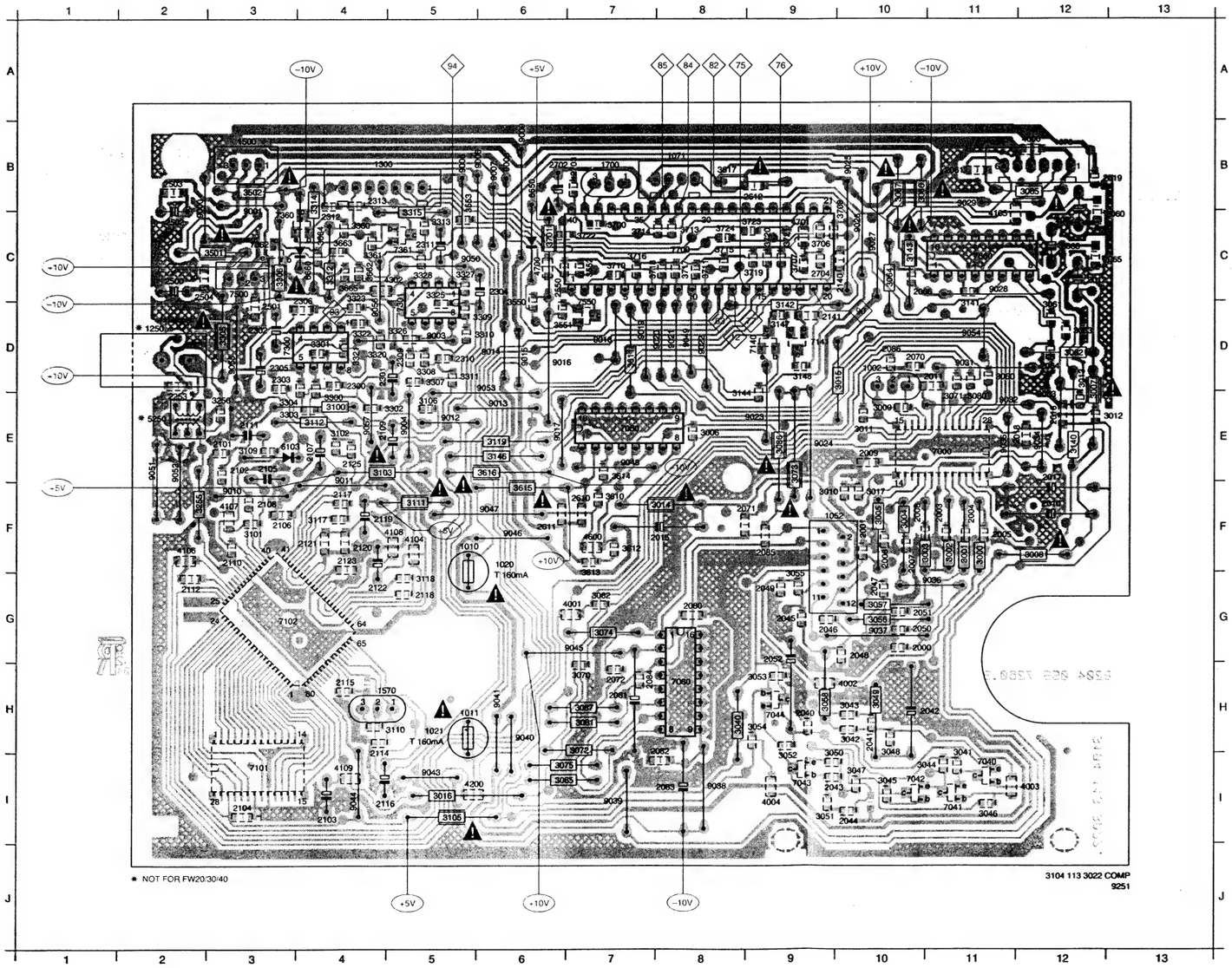

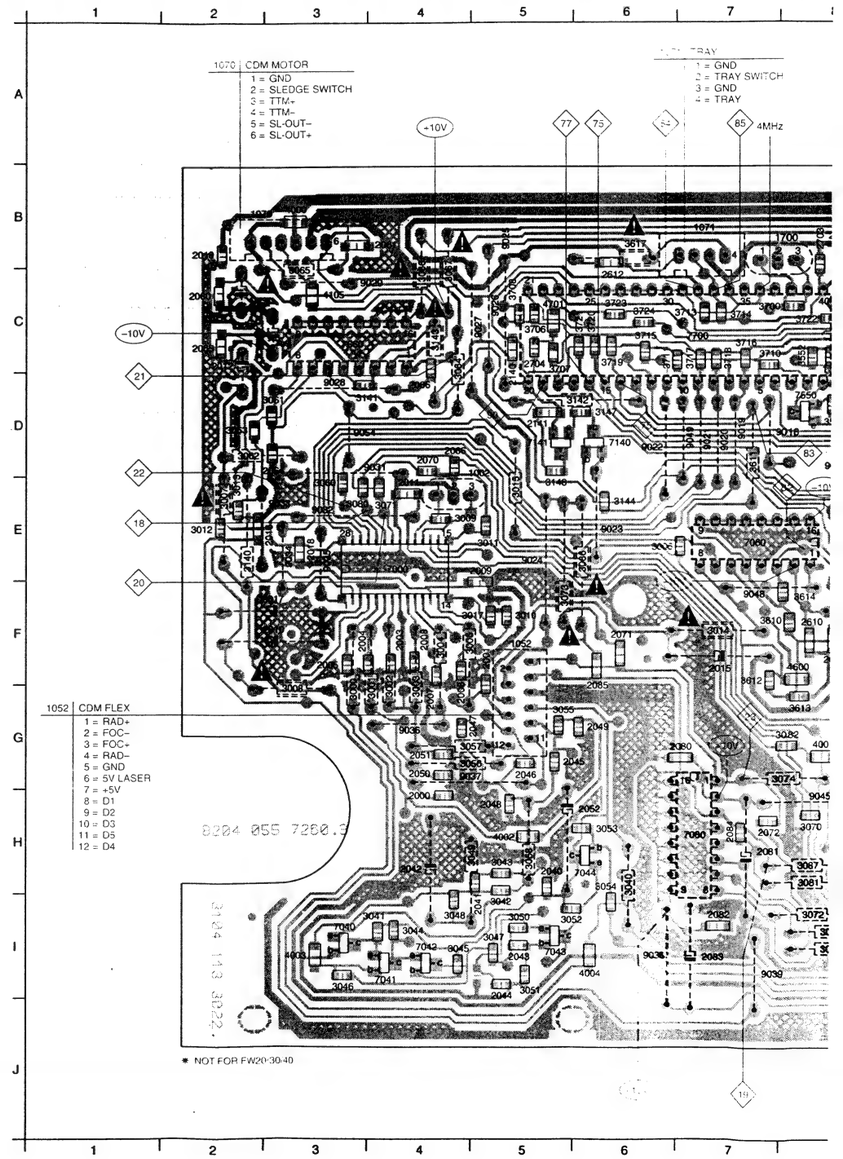

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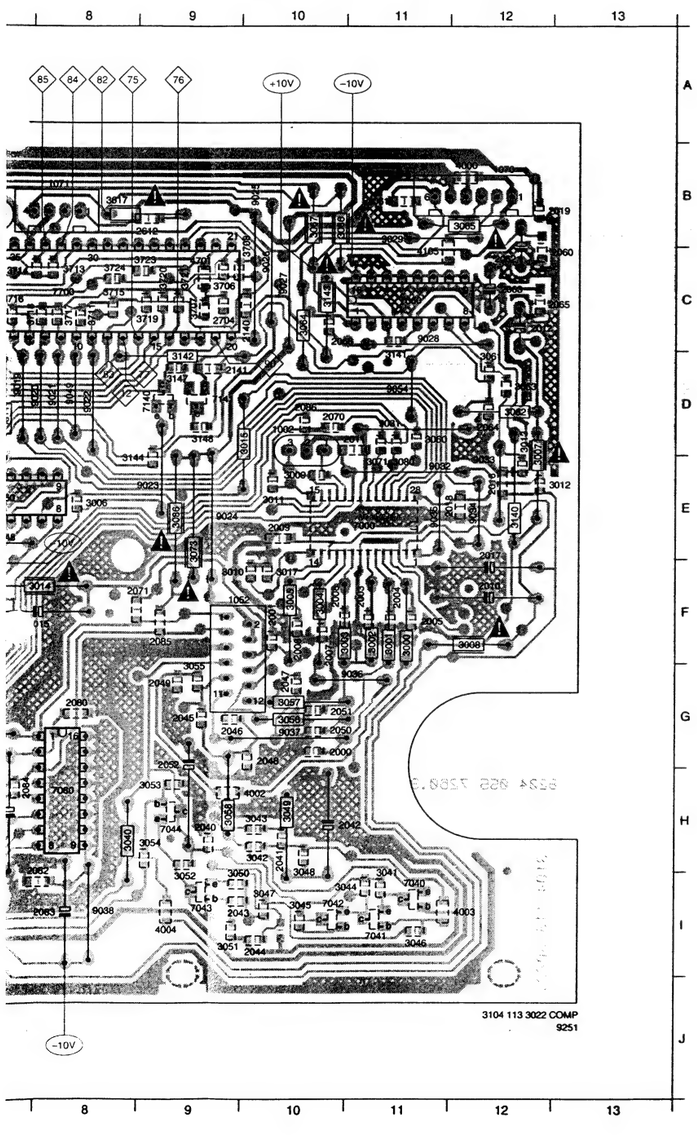
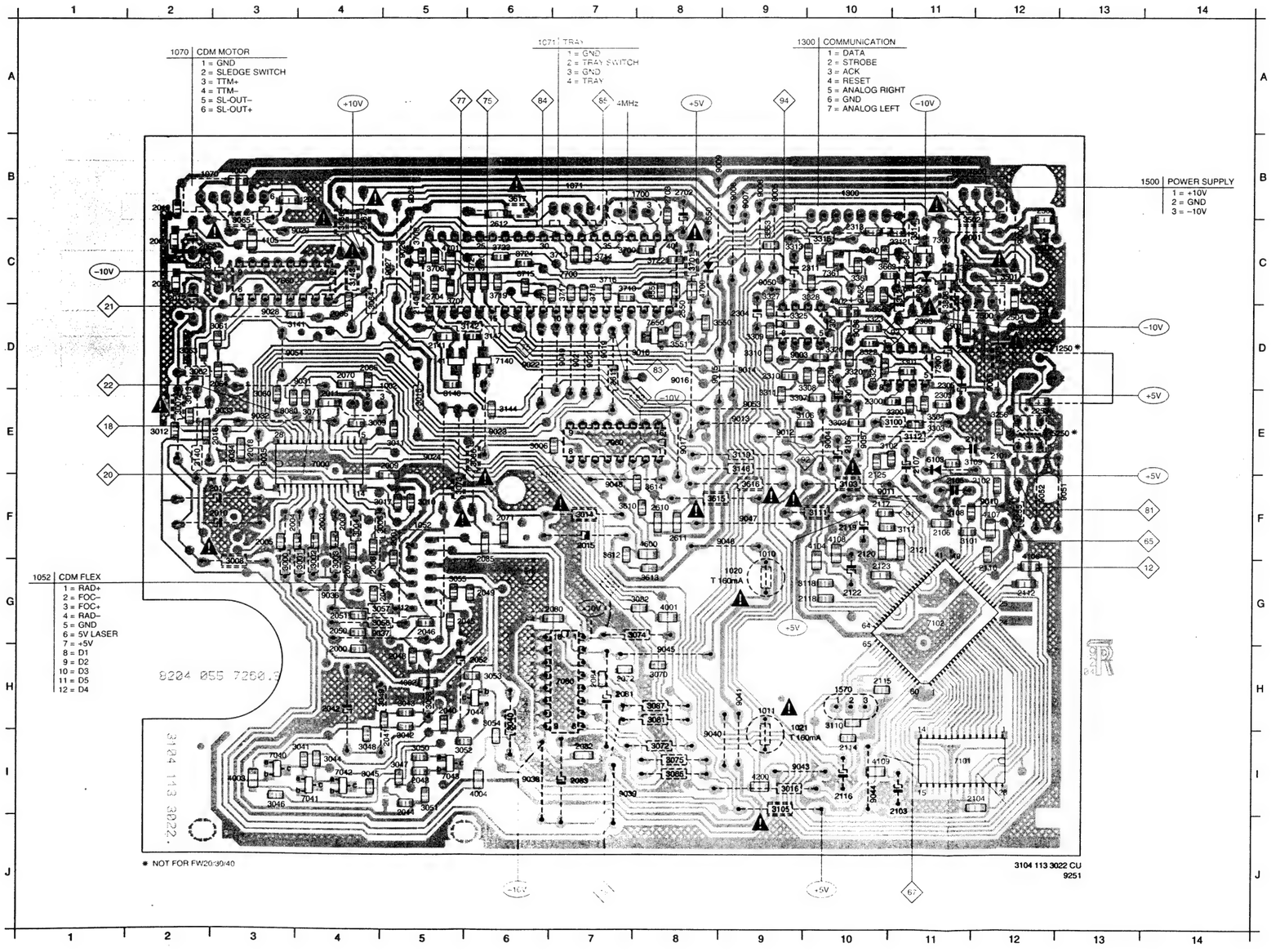
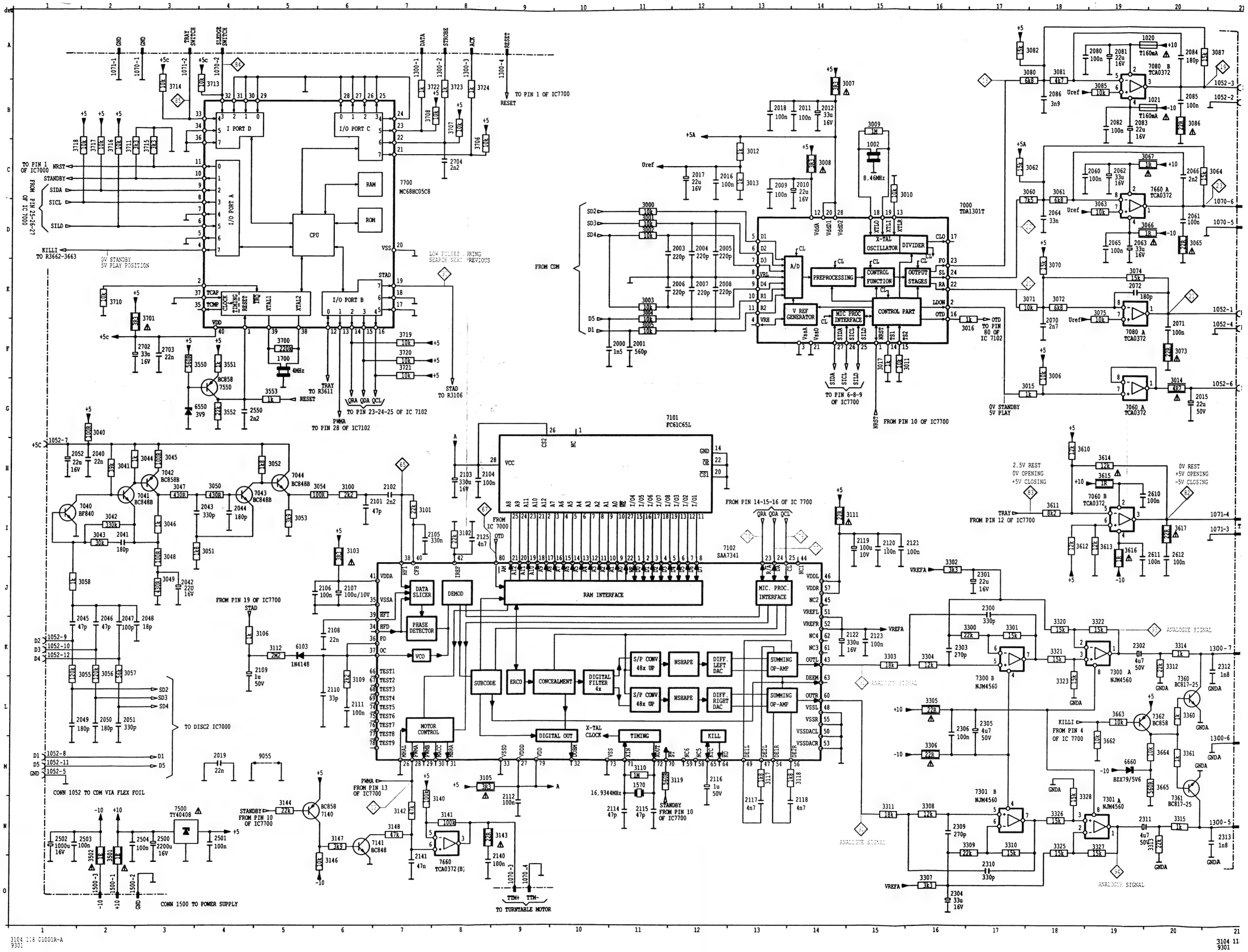
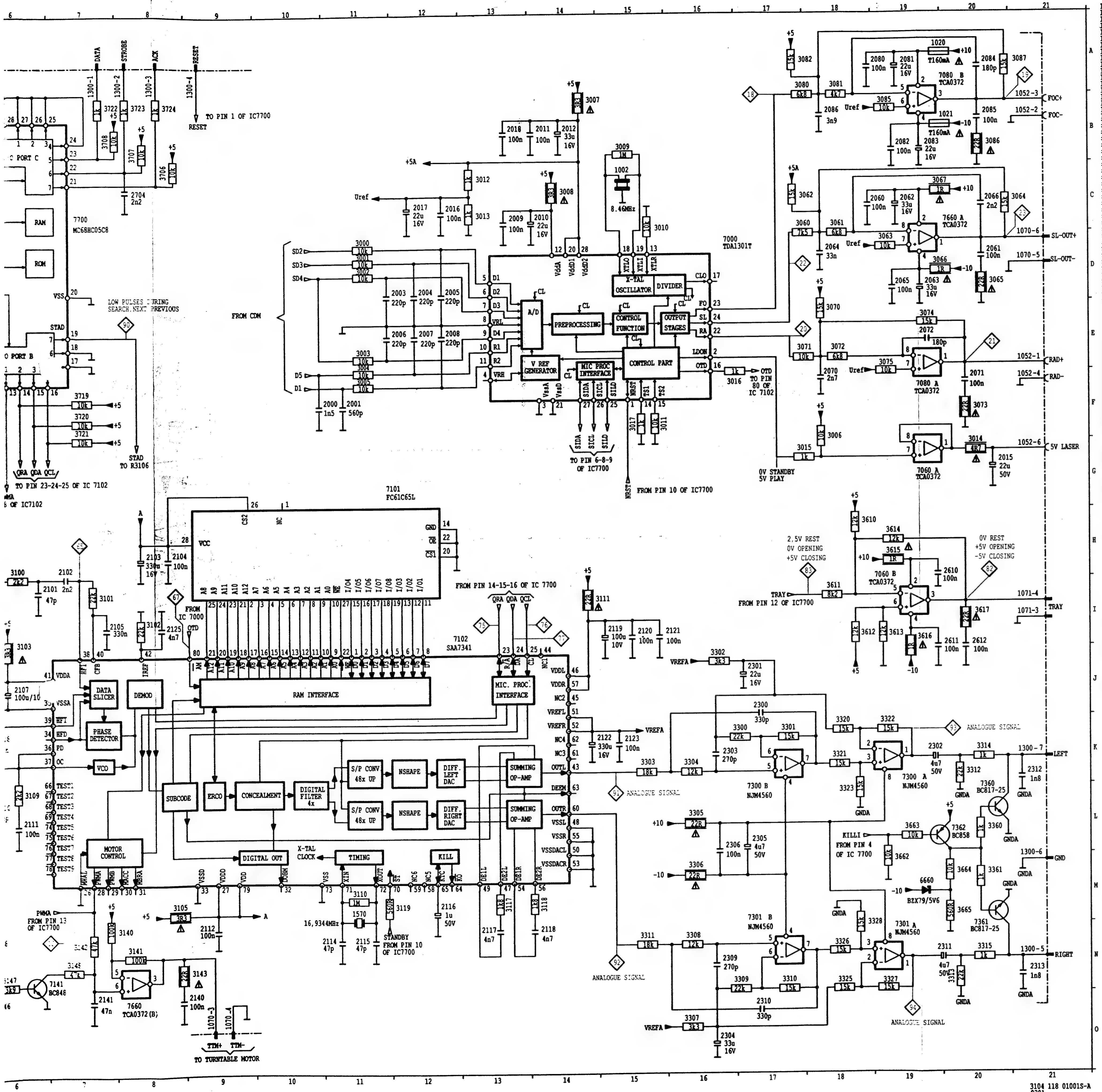
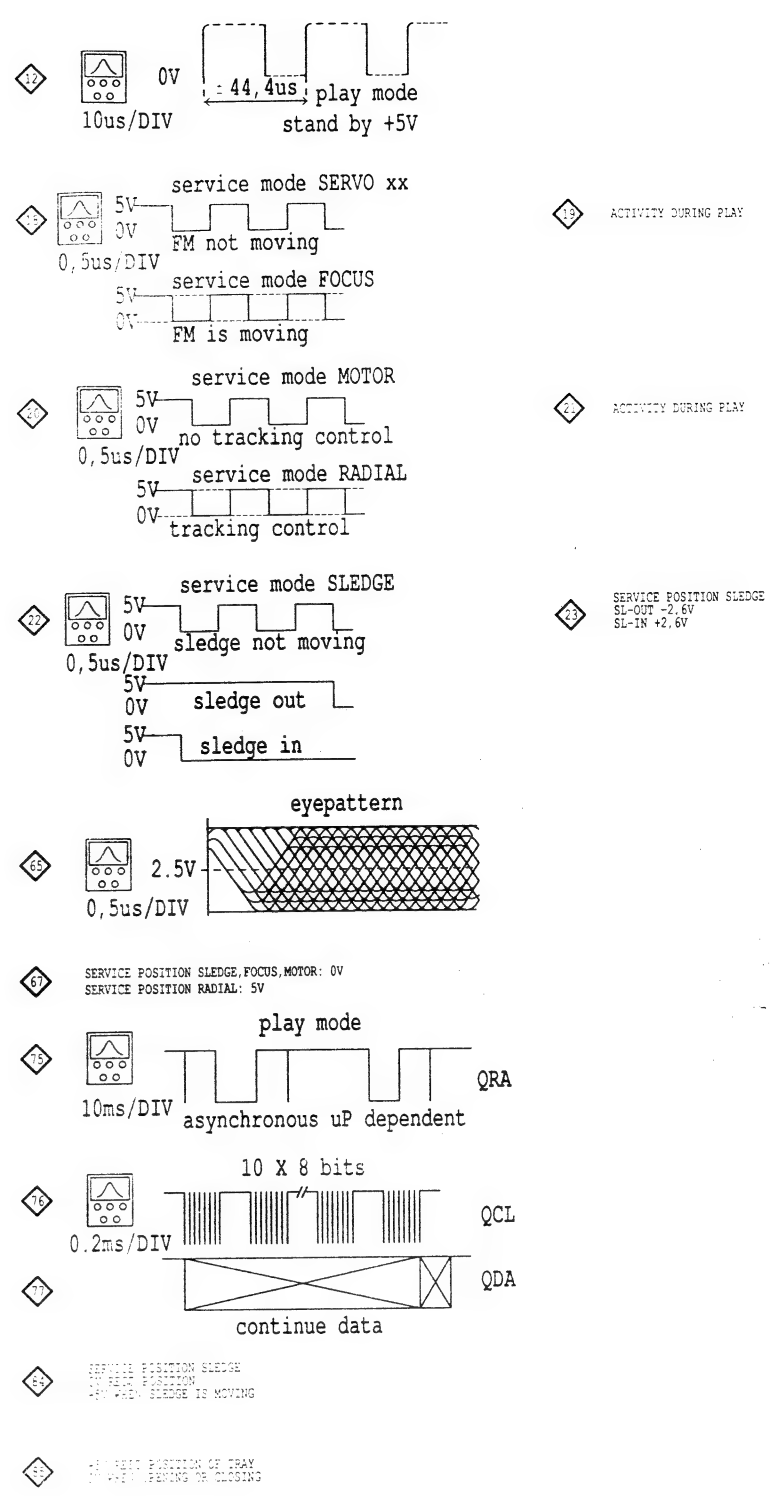




CD CIRCUIT DIAGRAM







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1700	F 5
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2001	F11
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2004	D12
2005	D12
2006	E12
2007	E12
2008	E12
2009	C13
2010	C14
2011	B14
2012	B14
2015	G20
2016	C12
2017	C12
2018	B13
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2041	I 2
2042	J 3
2043	I 4
2044	I 4
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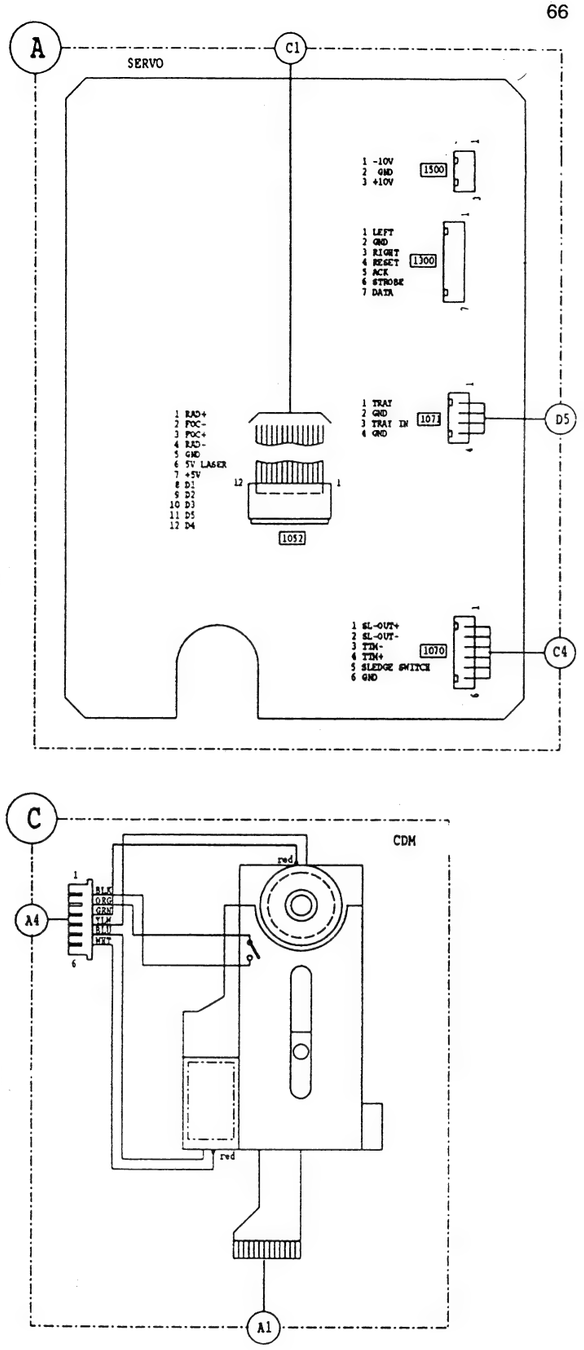
9301

WIRING DIAGRAM CD-PART

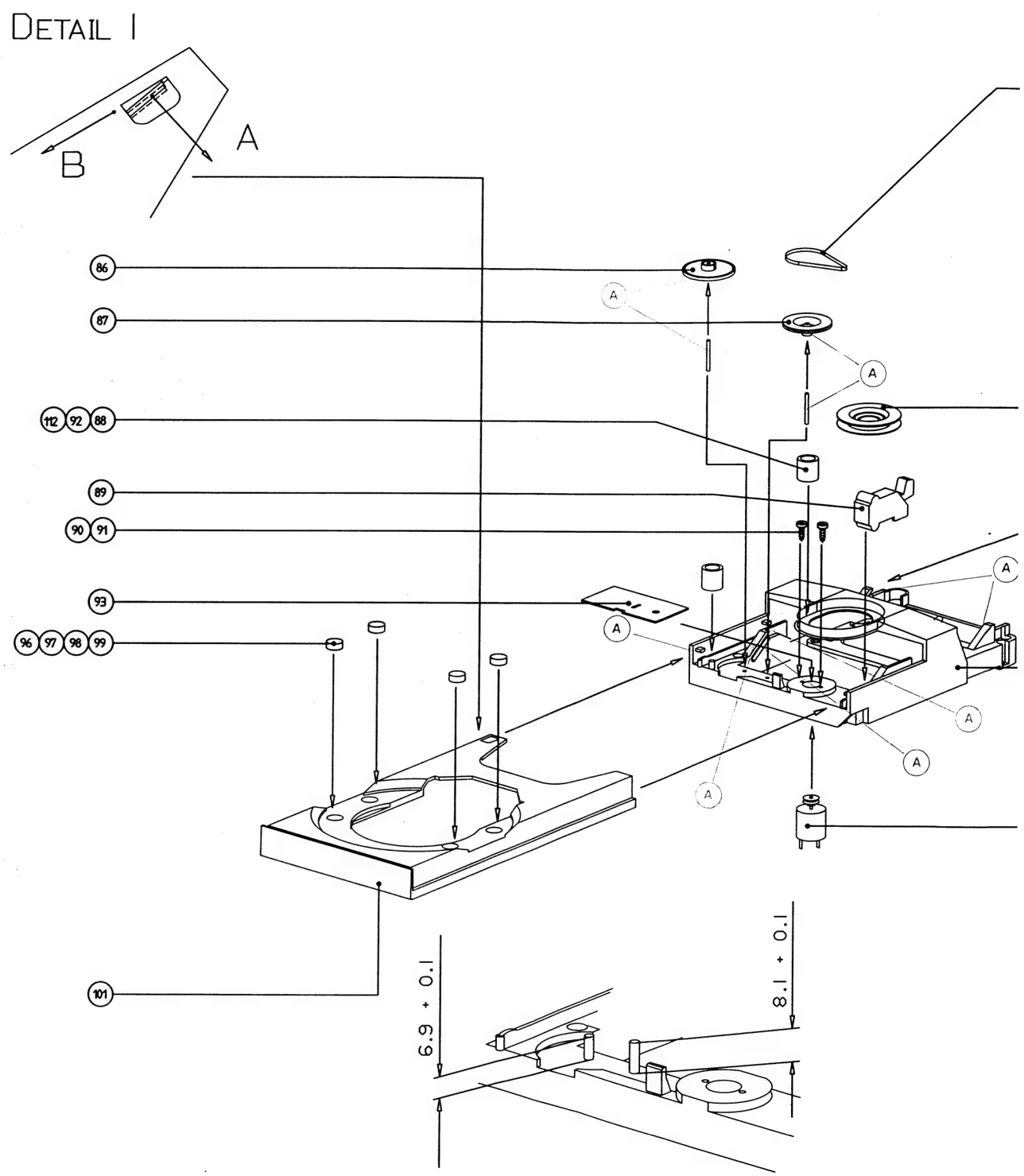


Note : Only the mentioned parts are normal service parts.

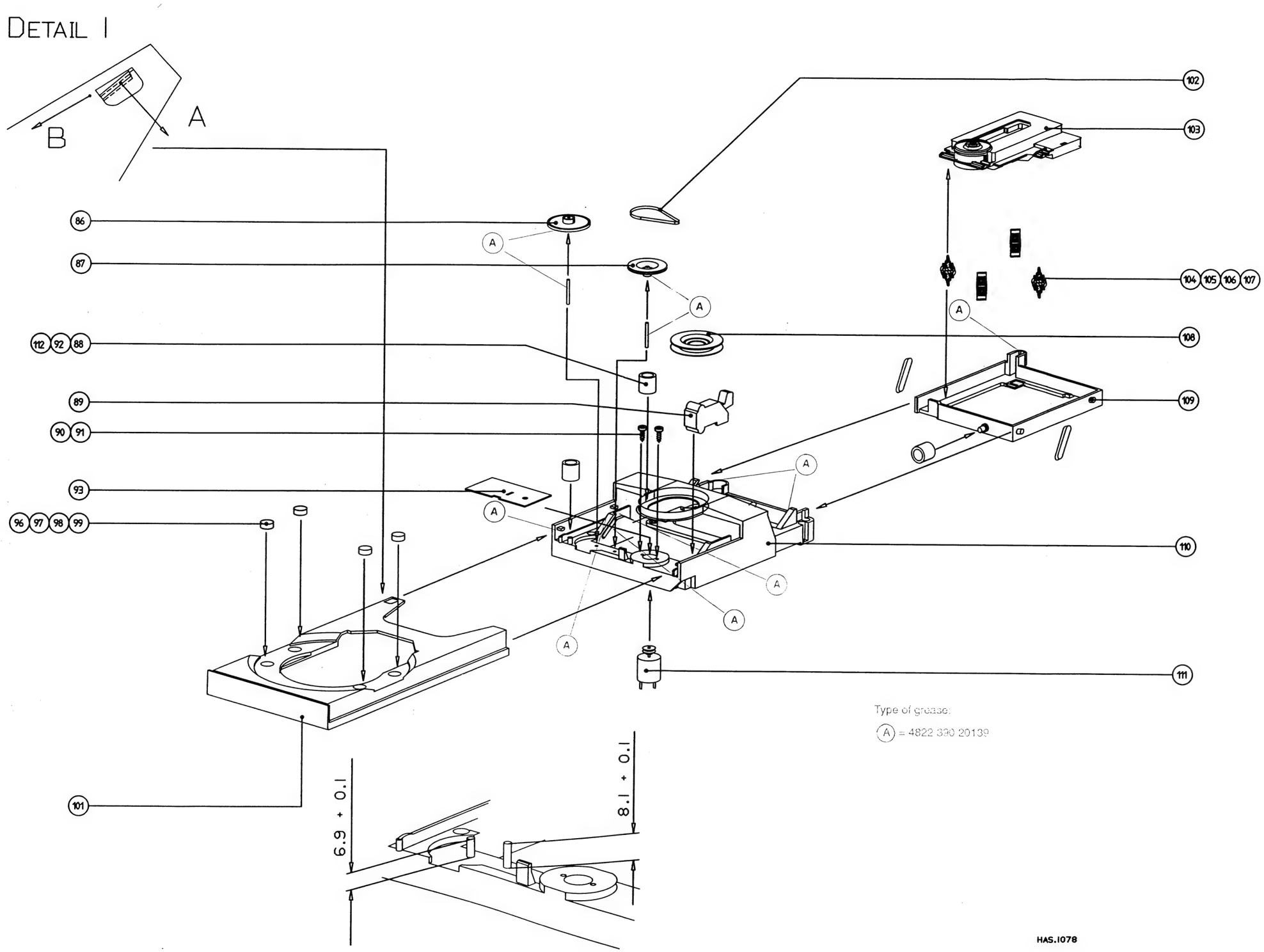
CD MECHANISM

86	4822 528 81464
87	4822 528 81465
88	4822 325 60379
89	4822 276 13222
93	4822 444 60816
96	4822 325 80511
101	4822 444 50679
102	4822 358 31168
103	4822 691 30278
104	4822 325 50215
108	4822 402 61412
109	4822 464 50895
110	4822 444 50678
111	4822 361 21492

CD EXPLODED VIEW



CD EXPLODED VIEW



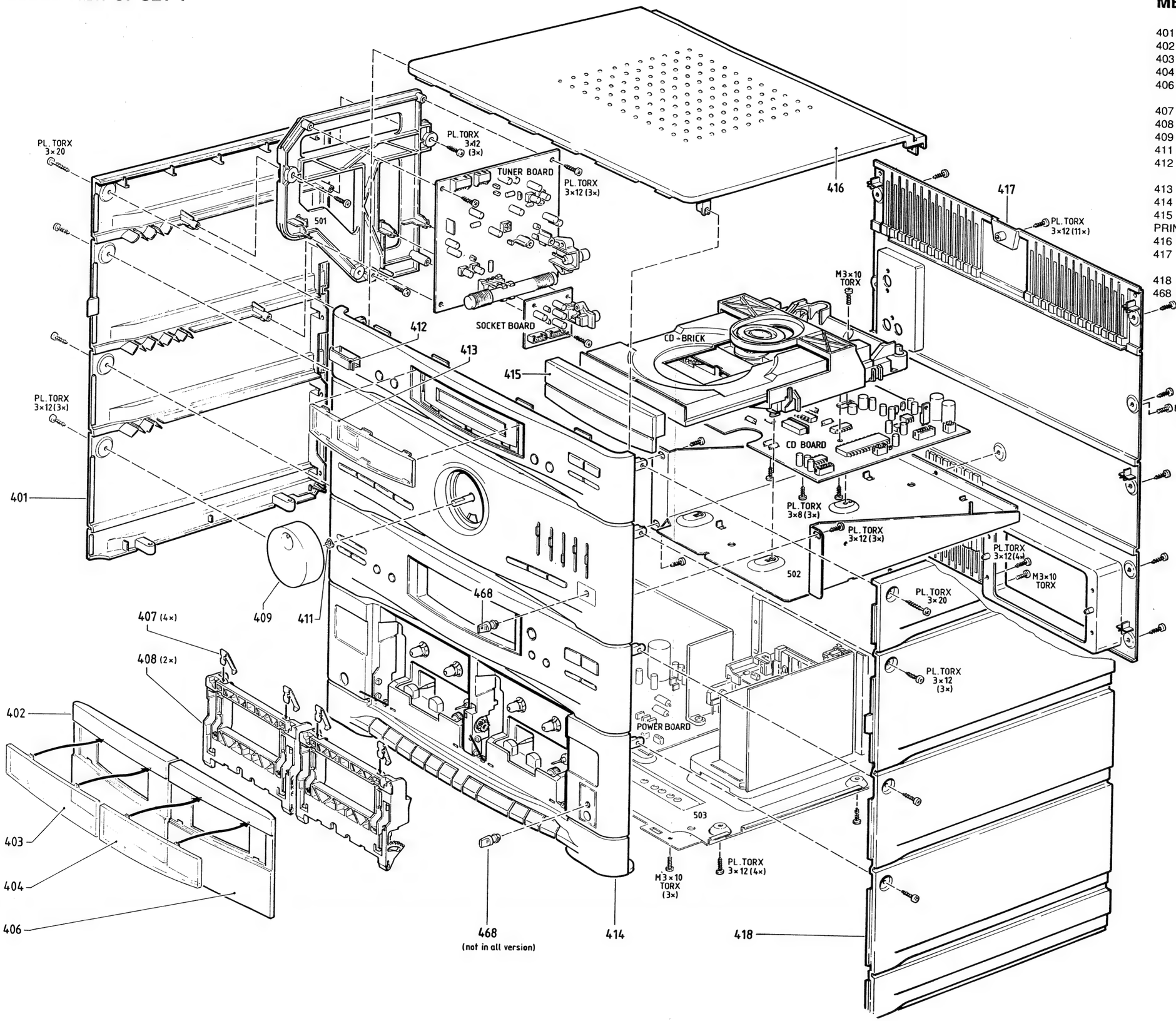
Type of grease:

(A) = 4822 390 20139

HAS.1078

mal service parts.

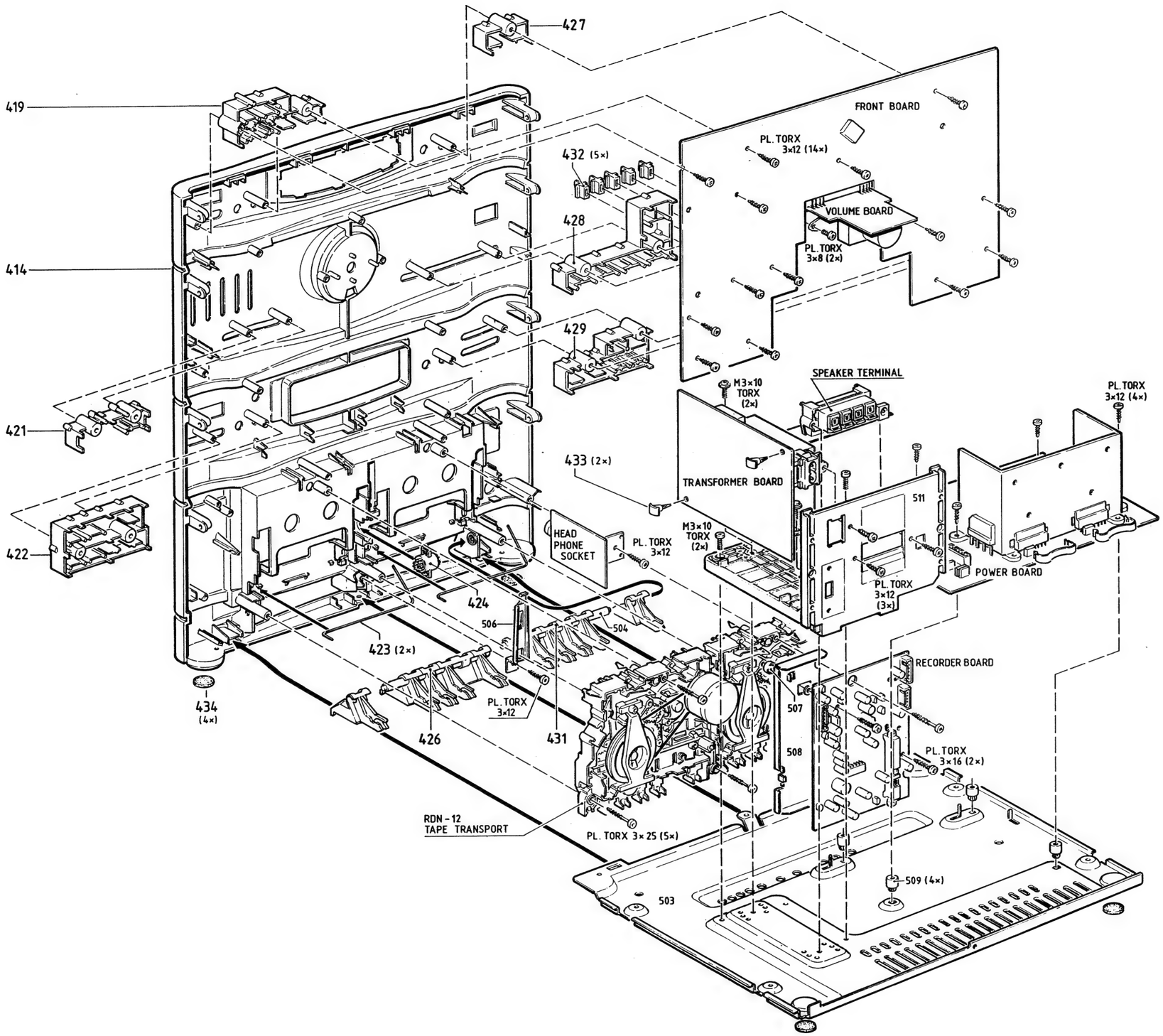
EXPLODED VIEW OF SET I



MECHANICAL PARTS

401	4822 426 30153	SIDE LEFT
402	4822 443 63936	CASS. DOOR A-DECK
403	4822 450 62087	WINDOW A-DECK
404	4822 450 62088	WINDOW B-DECK
406	4822 443 63977	CASS. DOOR B-DECK
407	4822 492 63927	SPRING CASS. PRESS
408	4822 443 63037	DOOR CASSETTE
409	4822 413 41792	VOLUME KNOB
411	4822 492 51374	SPRING KNOB CLAMP
412	4822 381 11418	IR WINDOW
413	4822 450 62074	WINDOW PRINTED
414	4822 426 51662	FRONT PRINTED
415	4822 444 40661	TRAY FRONT PRINTED
416	4822 426 60639	COVER
417	4822 426 20241	BACKPLATE
418	4822 426 30152	SIDE RIGHT
468	4822 413 31758	KNOB BALANCE

EXPLODED VIEW OF SET II



MECHANICAL PARTS

414	4822 426 51662	FRONT PRINTED
418	4822 426 30152	SIDE RIGHT
419	4822 410 62618	KNOB PRESET UP/DOWN
421	4822 410 62722	KNOB HSD+DOLBY+CROME
422	4822 410 62626	KNOB CD RIGHT
423	4822 429 42595	SPRING CASS. COMPARTMENT
424	4822 529 10287	DAMPER
426	4822 410 62619	BUTTON SET
427	4822 410 62623	KNOB AUTOPROGRAM
428	4822 410 62617	KNOB SELECTOR+POWER
429	4822 410 62724	KNOB CD LEFT
431	4822 410 62621	BUTTON SET
432	4822 411 61929	KNOB EQUALIZER
433	4822 466 93148	SPACER
434	4822 462 40683	RUBBER FOOT

FRONT BOARD

MISCELLANEOUS

1408	4822 267 30631	CINCH SOCKET
1410	4822 267 40659	HEADPHONE SOCKET
1415	4822 130 91245	FTD-11894
1416	4822 134 40965	LAMP INC. 12V 150mA
1417	4822 134 40965	LAMP INC. 12V 150mA
1420	4822 276 13114	TACT SWITCH
1421	4822 276 13114	TACT SWITCH
1422	4822 276 13114	TACT SWITCH
1423	4822 276 13114	TACT SWITCH
1424	4822 276 13114	TACT SWITCH
1425	4822 276 13114	TACT SWITCH
1426	4822 276 13114	TACT SWITCH
1427	4822 276 13114	TACT SWITCH
1428	4822 276 13114	TACT SWITCH
1429	4822 276 13114	TACT SWITCH
1430	4822 276 13114	TACT SWITCH
1431	4822 276 13114	TACT SWITCH
1432	4822 276 13114	TACT SWITCH
1433	4822 276 13114	TACT SWITCH
1434	4822 276 13114	TACT SWITCH
1435	4822 276 13114	TACT SWITCH
1436	4822 276 13114	TACT SWITCH
1437	4822 276 13114	TACT SWITCH
1438	4822 276 13114	TACT SWITCH
1439	4822 276 13114	TACT SWITCH
1440	4822 276 13114	TACT SWITCH
1442	4822 276 13114	TACT SWITCH
1443	4822 276 13114	TACT SWITCH
1444	4822 276 13114	TACT SWITCH
1445	4822 276 13114	TACT SWITCH
1446	4822 276 13114	TACT SWITCH
1447	4822 276 13114	TACT SWITCH
1448	4822 276 13114	TACT SWITCH
1475	4822 276 13114	TACT SWITCH

DIODES

6401	4822 130 30621	1N4148
6402	4822 130 30621	1N4148
6403	4822 130 30621	1N4148
6404	4822 130 30621	1N4148
6405	4822 130 30621	1N4148
6406	4822 130 30621	1N4148
6407	4822 130 30621	1N4148
6408	4822 130 30621	1N4148
6409	4822 130 30621	1N4148
6410	4822 130 30621	1N4148
6411	4822 130 30621	1N4148
6412	4822 130 30621	1N4148
6413	4822 130 30621	1N4148
6414	4822 130 30621	1N4148
6415	4822 130 30621	1N4148
6416	4822 130 30621	1N4148
6418	4822 130 30621	1N4148
6419	4822 130 30621	1N4148
6420	4822 130 30621	1N4148
6421	4822 130 30621	1N4148

DIODES

6422	4822 130 30621	1N4148
6423	4822 130 30621	1N4148
6424	4822 130 30621	1N4148
6425	4822 130 30621	1N4148
6427	4822 130 34174	BZX79-C4V7
6428	4822 130 34197	BZX79-C12 (UAW)
6431	4822 130 34174	BZX79-C4V7
6442	4822 130 82021	LTL307G
6450	4822 130 30861	BZX79-C7V5
6453	4822 130 30621	1N4148
6455	4822 130 30621	1N4148
6456	4822 130 30621	1N4148

TRANSISTORS

7406	4822 130 40941	BC558
7408	4822 130 40938	BC548
7409	4822 130 41344	BC337-40
7410	4822 130 41344	BC337-40
7411	4822 130 41344	BC337-40
7412	4822 130 41344	BC337-40
7413	4822 130 40938	BC548
7421	4822 130 44196	BC548C
7423	4822 130 40941	BC558
7424	4822 130 41327	BC327-40
7426	4822 130 40941	BC558
7427	4822 130 40938	BC548
7430	4822 130 40938	BC548
7445	5322 130 44779	BC338-40
7446	5322 130 44779	BC338-40
7447	4822 130 44246	BC549C
7448	4822 130 44246	BC549C

INTEGRATED CIRCUITS

7403	4822 209 83274	NJM4560D
7407	4822 209 83274	NJM4560D
7415	4822 209 32392	TMP87PH20F
7418	4822 209 31508	ST24C01
7419	5322 209 10421	HEF4094BP
7420	5322 209 10421	HEF4094BP
7422	4822 214 52009	GP1U58XP
7425	4822 209 80891	MC7805CT

COILS

5401	5322 242 73697	CERAM.RES. 8MHz
5402	4822 157 50961	22µH
5405	4822 157 62552	COIL 2,2µH

RESISTORS

3401	4822 116 52297	68k	5%	0,5W
3402	4822 116 52297	68k	5%	0,5W
3403	4822 116 52264	27k	5%	0,5W
3404	4822 116 52264	27k	5%	0,5W
3405	4822 116 52284	47k	5%	0,5W

RESISTORS

3406	4822 116 52284	47k	5%	0,5W
3407	4822 116 52269	3k3	5%	0,5W
3408	4822 116 52269	3k3	5%	0,5W
3409	4822 116 52291	56k	5%	0,5W
3410	4822 116 52291	56k	5%	0,5W
3411	4822 116 52243	1k5	5%	0,16W
3412	4822 116 52243	1k5	5%	0,16W
3413	4822 116 52234	100k	5%	0,5W
3414	4822 116 52234	100k	5%	0,5W
3415	4822 116 52233	10k	5%	0,5W
3416	4822 116 52233	10k	5%	0,5W
3417	4822 116 52284	47k	5%	0,5W
3418	4822 116 52284	47k	5%	0,5W
3419	4822 116 52284	47k	5%	0,5W
3420	4822 116 52284	47k	5%	0,5W
3421	4822 116 52284	47k	5%	0,5W
3422	4822 116 52284	47k	5%	0,5W
3423	4822 116 52284	47k	5%	0,5W
3424	4822 116 52284	47k	5%	0,5W
3425	4822 116 52224	470R	5%	0,5W
3426	4822 116 52224	470R	5%	0,5W
3427	4822 116 52257	22k	5%	0,5W
3428	4822 116 52257	22k	5%	0,5W
3431	4822 116 52263	2k7	5%	0,5W
3432	4822 116 52263	2k7	5%	0,5W
3433	4822 116 52276	3k9	5%	0,5W
3434	4822 116 52276	3k9	5%	0,5W
3435	4822 050 11002	1k	5%	0,2W
3436	4822 050 11002	1k	5%	0,2W
3437	4822 116 52251	18k	5%	0,5W
3438	4822 116 52251	18k	5%	0,5W
3439	4822 116 52224	470R	5%	0,5W
3440	4822 116 52224	470R	5%	0,5W
3441	4822 116 52224	470R	5%	0,5W
3442	4822 116 52224	470R	5%	0,5W
3443	4822 116 52291	56k	5%	0,5W
3444	4822 116 52291	56k	5%	0,5W
3445	4822 051 10333	33k	2%	0,25W
3446	4822 051 10333	33k	2%	0,25W
3447	4822 051 10333	33k	2%	0,25W
3448	4822 051 10333	33k	2%	0,25W
3449	4822 116 52264	27k	5%	0,5W
3450	4822 116 52264	27k	5%	0,5W
3451	4822 051 10333	33k	2%	0,25W
3452	4822 051 10333	33k	2%	0,25W
3455	4822 051 10333	33k	2%	0,25W
3456	4822 051 10333	33k	2%	0,25W
3457	4822 116 52264	27k	5%	0,5W
3458	4822 116 52264	27k	5%	0,5W
3459	4822 051 10333	33k	2%	0,25W
3460	4822 051 10333	33k	2%	0,25W
3461	4822 051 10333	33k	2%	0,25W
3462	4822 051 10333	33k	2%	0,25W
3463	4822 116 52285	470k	5%	0,5W
3464	4822 116 52285	470k	5%	0,5W
3465	4822 116 52283	4k7	5%	0,5W
3466	4822 116 52283	4k7	5%	0,5W
3469	4822 116 52283	4k7	5%	0,5W
3470	4822 116 52283	4k7	5%	0,5W
3471	4822 116 52256	2k2	5%	0,16W

RESISTORS

3472	4822 116 52256	2k2	5%	0,16W
3473	4822 116 52257	22k	5%	0,5W
3474	4822 116 52257	22k	5%	0,5W
3475	4822 116 52224	470R	5%	0,5W
3476	4822 116 52224	470R	5%	0,5W
3477	4822 116 52256	2k2	5%	0,16W
3478	4822 116 52283	4k7	5%	0,5W
3479	4822 101 21235	Pot 20k lin		
3480	4822 102 10414	Pot 2x20kB		
3481	4822 101 21102	Pot 2x 50k		
3482	4822 101 21102	Pot 2x 50k		
3483	4822 101 21102	Pot 2x 50k		
3484	4822 101 21102	Pot 2x 50k		
3485	4822 101 21102	Pot 2x 50k		
3486	4822 050 11002	1k	5%	0,2W
3487	4822 050 11002	1k	5%	0,2W
3488	4822 050 11002	1k	5%	0,2W
3489	4822 050 11002	1k	5%	0,2W
3490	4822 116 52215	220R	5%	0,16W
3491	4822 116 52233	10k	5%	0,5W
3492	4822 116 52228	680R	5%	0,5W
3493	4822 116 52215	220R	5%	0,16W
3494	4822 116 52215	220R	5%	0,16W
3495	4822 116 52215	220R	5%	0,16W
3496	4822 116 52215	220R	5%	0,16W
3497	4822 116 52257	22k	5%	0,5W
3498	4822 116 52233	10k	5%	0,5W
3499	4822 116 52215	220R	5%	0,16W
3500	4822 116 52217	270R	5%	0,5W
3501	4822 116 52269	3k3	5%	0,5W
3502	4822 050 11002	1k	5%	0,2W
3503	4822 050 11002	1k	5%	0,2W
3504	4822 116 52269	3k3	5%	0,5W
3505	4822 116 52251	18k	5%	0,5W
3506	4822 116 52175	100R	5%	0,5W
3507	4822 116 52217	270R	5%	0,5W
3508	4822 116 52217	270R	5%	0,5W
3516	4822 116 52233	10k	5%	0,5W
3517	4822 116 52233	10k	5%	0,5W
3526	4822 116 52228	680R	5%	0,5W
3528	4822 116 52304	82k	5%	0,5W
3530	4822 116 52233	10k	5%	0,5W
3531	4822 116 52283	4k7	5%	0,5W
3532	4822 116 52283	4k7	5%	0,5W
3533	4822 116 52283	4k7	5%	0,5W
3534	4822 116 52283	4k7	5%	0,5W
3535	4822 116 52283	4k7	5%	0,5W
3536	4822 116 52283	4k7	5%	0,5W
3537	4822 116 52217	270R	5%	0,5W
3538	4822 116 52217	270R	5%	0,5W
3539	4822 116 52217	270R	5%	0,5W
3540	4822 116 52258	220k	5%	0,5W
3552	4822 050 11002	1k	5%	0,2W
3554	4822 116 52233	10k	5%	0,5W
3555	4822 116 52233	10k	5%	0,5W
3556	4822 116 52233	10k	5%	0,5W
3557	4822 116 52233	10k	5%	0,5W
3558	4822 116 52256	2k2	5%	0,16W
3559	4822 116 52256	2k2	5%	0,16W
3560	4822 116 52283	4k7	5%	0,5W

RESISTORS

3562	4822 050 11002	1k	5%	0,2W
3563	4822 116 52233	10k	5%	0,5W
3564	4822 050 11002	1k	5%	0,2W
3565	4822 050 11002	1k	5%	0,2W
3568	4822 116 52233	10k	5%	0,5W
3569	4822 116 52233	10k	5%	0,5W
3570	4822 116 52233	10k	5%	0,5W
3571	4822 116 52233	10k	5%	0,5W
3585	4822 116 52249	1k8	5%	0,16W
3586	4822 116 52175	100R	5%	0,5W
3587	4822 116 52175	100R	5%	0,5W
3589	4822 050 11002	1k	5%	0,2W
3590	4822 116 52257	22k	5%	0,5W
3591	4822 050 11002	1k	5%	0,2W
3592	4822 116 52257	22k	5%	0,5W
3593	4822 050 11002	1k	5%	0,2W
3594	4822 116 52224	470R	5%	0,5W
3595	4822 116 52224	470R	5%	0,5W
3596	4822 116 52224	470R	5%	0,5W
3597	4822 116 52224	470R	5%	0,5W
3598	4822 116 52256	2k2	5%	0,16W
3601	4822 116 52224	470R	5%	0,5W
3602	4822 116 52224	470R	5%	0,5W
3603	4822 050 11002	1k	5%	0,2W
3604	4822 050 11002	1k	5%	0,2W
3605	4822 116 52283	4k7	5%	0,5W
3606	4822 116 52283	4k7	5%	0,5W
3607	4822 116 52256	2k2	5%	0,16W
3608	4822 116 52256	2k2	5%	0,16W
3609	4822 116 52296	6k8	5%	0,5W
3610	4822 116 52215	220R	5%	0,16W
3612	4822 116 52256	2k2	5%	0,16W
3613	4822 050 11002	1k	5%	0,2W
3615	4822 116 52224	470R	5%	0,5W
3616	4822 116 52215	220R	5%	0,16W
3617	4822 116 52228	680R	5%	0,5W
3618	4822 116 52233	10k	5%	0,5W
3620	4822 116 52233	10k	5%	0,5W
3621	4822 116 52224	470R	5%	0,5W
3622	4822 116 52224	470R	5%	0,5W
3623	4822 116 52224	470R	5%	0,5W
3624	4822 116 52224	470R	5%	0,5W
3649	4822 050 22205	2M2	1%	0,6W
3650	4822 050 22205	2M2	1%	0,6W
3651	4822 116 52257	22k	5%	0,5W
3652	4822 116 52257	22k	5%	0,5W
3653	4822 116 52235	1M	5%	0,5W
3654	4822 116 52235	1M	5%	0,5W
3655	4822 116 52224	470R	5%	0,5W
3660	4822 050 11002	1k	5%	0,2W
3661	4822 050 11002	1k	5%	0,2W
3662	4822 116 52224	470R	5%	0,5W
3663	4822 116 52224	470R	5%	0,5W
3664	4822 116 52228	680R	5%	0,5W
3665	4822 116 52256	2k2	5%	0,16W
3666	4822 116 52234	100k	5%	0,5W
3667	4822 116 52234	100k	5%	0,5W
3668	4822 050 11002	1k	5%	0,2W
3672	4822 050 11002	1k	5%	0,2W

CAPACITORS

2401	4822 124 40239	0,47µF	20%	63V
2402	4822 124 40239	0,47µF	20%	63V
2403	4822 124 40239	0,47µF	20%	63V
2404	4822 124 40239	0,47µF	20%	63V
2405	4822 124 40239	0,47µF	20%	63V
2406	4822 124 40239	0,47µF	20%	63V
2407	4822 124 40239	0,47µF	20%	63V
2408	4822 124 40239	0,47µF	20%	63V
2409	4822 122 33848	47pF	5%	50V
2410	4822 122 33848	47pF	5%	50V
2411	4822 122 33848	47pF	5%	50V
2412	4822 122 33848	47pF	5%	50V
2413	4822 122 33848	47pF	5%	50V
2414	4822 122 33848	47pF	5%	50V
2415	4822 122 33848	47pF	5%	50V
2416	4822 122 33848	47pF	5%	50V
2417	4822 126 12702	270pF	10%	50V
2418	4822 126 12702	270pF	10%	50V
2419	4822 122 33195	100pF	10%	50V
2420	4822 122 33195	100pF	10%	50V
2421	4822 122 33848	47pF	5%	50V
2422	4822 122 33848	47pF	5%	50V
2425	4822 122 33195	100pF	10%	50V
2426	4822 122 33195	100pF	10%	50V
2427	4822 124 40242	1µF	20%	63V
2428	4822 124 40242	1µF	20%	63V
2429	4822 126 12702	270pF	10%	50V
2430	4822 126 12702	270pF	10%	50V
2431	4822 122 33197	1nF	10%	50V
2432	4822 122 33197	1nF	10%	50V
2433	4822 122 33197	1nF	10%	50V
2434	4822 122 33197	1nF	10%	50V
2435	4822 126 11714	4,7nF	20%	
2436	4822 126 11714	4,7nF	20%	
2437	4822 126 11714	4,7nF	20%	
2438	4822 126 11714	4,7nF	20%	
2439	4822 126 11585	22nF	50V	
2440	4822 126 11585	22nF	50V	
2441	4822 126 11585	22nF	50V	
2442	4822 126 11585	22nF	50V	
2443	4822 121 43526	47nF	5%	100V
2444	4822 121 43526	47nF	5%	100V
2445	4822 121 42408	220nF	5%	63V
2446	4822 121 42408	220nF	5%	63V
2449	4822 122 33195	100pF	10%	50V
2450	4822 122 33195	100pF	10%	50V
2451	4822 124 40246	4,7µF	20%	63V
2452	4822 124 40246	4,7µF	20%	63V
2453	4822 121 51387	10nF	20%	16V
2454	4822 121 51387	10nF	20%	16V
2455	4822 122 33192	27pF	5%	50V
2456	4822 122 33192	27pF	5%	50V
2460	4822 124 40239	0,47µF	20%	63V
2461	4822 126 11585	22nF		50V
2462	4822 126 11585	22nF		50V
2463	4822 126 11585	22nF		50V
2464	4822 124 41525	100µF	20%	25V
2465	4822 124 22263	220µF	20%	25V
2466	4822 124 40248	10µF	20%	63V
2468	4822 124 40248	10µF	20%	63V

CAPACITORS

2469	4822 124 40242	1µF	20%	63V
2470	4822 124 40242	1µF	20%	63V
2471	4822 122 33519	470pF	10%	50V
2472	4822 122 33519	470pF	10%	50V
2473	4822 124 40433	47µF	20%	25V
2475	4822 124 22263	220µF	20%	25V
2476	4822 124 41525	100µF	20%	25V
2477	4822 124 40433	47µF	20%	25V
2483	4822 122 33197	1nF	10%	50V
2484	4822 122 33197	1nF	10%	50V
2485	4822 122 33197	1nF	10%	50V
2502	4822 124 41525	100µF	20%	25V
2503	4822 124 41525	100µF	20%	25V
2504	5322 124 21643	22µF	20%	40V
2505	4822 126 11585	22nF		50V
2507	4822 126 12702	270pF	10%	50V
2510	4822 122 33848	47pF	5%	50V
2512	4822 124 40242	1µF	20%	63V
2513	4822 124 40248	10µF	20%	63V
2514	4822 126 12702	270pF	10%	50V
2552	4822 122 10466	220pF	10%	
2553	4822 122 10466	220pF	10%	
2554	4822 122 33197	1nF	10%	50V
2555	4822 122 33197	1nF	10%	50V
2556	4822 122 33195	100pF	10%	50V
2557	4822 122 33195	100pF	10%	50V
2558	5322 121 42386	100nF	5%	63V

POWER BOARD

MECHANICAL PARTS

	4822 255 40128	CLIP TO126
	5322 255 40397	CLIP IC

MISCELLANEOUS

1304	4822 267 31176	SPEAKER TERMINAL
1305	4822 264 30175	SOCKET EXT. SUPPLY

DIODES

6250	4822 130 82079	D3SBA20
6251	4822 130 30621	1N4148
6252	4822 130 30621	1N4148
6253	4822 130 34174	BZX79-C4V7
6254	4822 130 30621	1N4148
6255	5322 130 30684	1N4002
6256	5322 130 30684	1N4002
6257	5322 130 30684	1N4002
6258	5322 130 30684	1N4002
6259	4822 130 30621	1N4148
6261	5322 130 30684	1N4002
6350	4822 130 30621	1N4148
6351	4822 130 30621	1N4148
6352	4822 130 34278	BZX79-C6V8
6354	4822 130 30621	1N4148
1006	4822 130 83092	LED (Volume pot)

TRANSISTORS

7250	4822 130 40937	BC548B
7252	4822 130 61236	BD234
7253	4822 130 40937	BC548B
7254	4822 130 40937	BC548B
7255	4822 130 44197	BC558B
7309	4822 130 41344	BC337-40
7310	4822 130 41344	BC337-40
7311	4822 130 41344	BC337-40
7312	4822 130 41344	BC337-40
7350	4822 130 41344	BC337-40
7351	4822 130 40937	BC548B
7352	4822 130 40937	BC548B

INTEGRATED CIRCUITS

7313	4822 209 73356	AN7161N(FP)
7314	4822 209 73356	AN7161N(FP)

COILS

5309	4822 157 62552	COIL 2,2µH
5311	4822 157 62552	COIL 2,2µH
5312	4822 157 62552	COIL 2,2µH
5315	4822 157 62552	COIL 2,2µH
5316	4822 157 62552	COIL 2,2µH

RESISTORS

3250	4822 050 11002	1k	5%	0,2W
3251	4822 116 52233	10k	5%	0,5W
3252	4822 116 52233	10k	5%	0,5W
3254	4822 051 10333	33k	2%	0,25W
3255	4822 050 11002	1k	5%	0,2W
3256	4822 050 11002	1k	5%	0,2W
3257	4822 116 52233	10k	5%	0,5W
3258	4822 116 52283	4k7	5%	0,5W
3259	4822 051 10333	33k	2%	0,25W
3260	4822 116 52233	10k	5%	0,5W
3261	4822 116 52291	56k	5%	0,5W
3262	4822 050 11002	1k	5%	0,2W
3263	4822 116 52283	4k7	5%	0,5W
3264	4822 116 52217	270R	5%	0,5W
3307	4822 116 52256	2k2	5%	0,16W
3308	4822 116 52256	2k2	5%	0,16W
3309	4822 050 11002	1k	5%	0,2W
3310	4822 050 11002	1k	5%	0,2W
3311	4822 050 11002	1k	5%	0,2W
3312	4822 050 11002	1k	5%	0,2W
3313	4822 116 52256	2k2	5%	0,16W
3314	4822 116 52256	2k2	5%	0,16W
3315	4822 116 52233	10k	5%	0,5W
3316	4822 116 52233	10k	5%	0,5W
3317	4822 116 52213	180R	5%	0,5W
3318	4822 116 52213	180R	5%	0,5W
3319	4822 052 10228	2R2	5%	0,33W
3320	4822 052 10228	2R2	5%	0,33W
3321	4822 052 10228	2R2	5%	0,33W
3322	4822 052 10228	2R2	5%	0,33W
3323	4822 116 52175	100R	5%	0,5W
3324	4822 116 52175	100R	5%	0,5W
3325	4822 116 52175	100R	5%	0,5W
3326	4822 116 52175	100R	5%	0,5W
3350	4822 052 10479	47R	5%	0,3W
3351	4822 116 52276	3k9	5%	0,5W
3352	4822 116 52233	10k	5%	0,5W
3353	4822 116 52233	10k	5%	0,5W
3354	4822 116 52234	100k	5%	0,5W
3355	4822 116 52217	270R	5%	0,5W

CAPACITORS

2250	5322 121 42578	100nF	10%	100V
2251	5322 121 42386	100nF	5%	63V
2252	5322 121 42386	100nF	5%	63V
2253	4822 124 41995	6800µF		25V
2254	4822 124 40242	1µF	20%	63V
2255	4822 122 33197	1nF	10%	50V
2256	4822 126 11585	22nF		50V
2257	5322 121 42578	100nF	10%	100V
2258	5322 121 42386	100nF	5%	63V
2259	5322 121 42386	100nF	5%	63V
2260	4822 124 22412	2200µF	20%	16V
2261	4822 124 40201	1000µF	20%	16V
2262	4822 124 41525	100µF	20%	25V
2265	4822 124 41994	3300µF	20%	16V
2266	4822 122 33197	1nF	10%	50V

CAPACITORS

2267	4822 122 33197	1nF	10%	50V
2311	4822 124 40242	1µF	20%	63V
2312	4822 124 40242	1µF	20%	63V
2315	5322 121 42489	33nF	5%	100V
2316	5322 121 42489	33nF	5%	100V
2317	4822 124 40242	1µF	20%	63V
2318	4822 124 40242	1µF	20%	63V
2319	4822 124 40433	47µF	20%	25V
2320	4822 124 40433	47µF	20%	25V
2323	4822 126 12795	1,8nF	5%	16V
2324	4822 126 12795	1,8nF	5%	16V
2325	4822 124 40196	220µF	20%	16V
2326	4822 124 40196	220µF	20%	16V
2329	5322 124 41431	22µF	20%	25V
2330	5322 124 41431	22µF	20%	25V
2333	4822 124 40433	47µF	20%	25V
2334	4822 124 40433	47µF	20%	25V
2335	4822 124 40433	47µF	20%	25V
2336	4822 124 40433	47µF	20%	25V
2337	4822 121 42408	220nF	5%	63V
2338	4822 121 42408	220nF	5%	63V
2339	4822 121 42408	220nF	5%	63V
2340	4822 121 42408	220nF	5%	63V
2350	4822 124 41525	100µF	20%	25V
2351	5322 121 42386	100nF	5%	63V
2352	5322 121 42386	100nF	5%	63V
2353	5322 121 42386	100nF	5%	63V
2354	4822 124 40242	1µF	20%	63V
2357	4822 124 40435	10µF	20%	50V
2361	4822 121 51387	10nF	20%	16V
2362	4822 121 51387	10nF	20%	16V

CHIP CAPACITORS

2355	4822 126 12519	330pF	10%
2356	4822 126 12519	330pF	10%

TRAFO BOARD

MISCELLANEOUS

1250	4822 071 55002	FUSE T5A
1251	4822 071 56301	Fuse T 630mA/250V
1252	4822 071 56301	Fuse T 630mA/250V
1255	4822 265 31015	MAINS SOCKET
5250	4822 146 31256	TRANSFORMER /20, /22
5250	4822 146 31246	TRANSFORMER /25

COILS

5251	4822 157 70003	COIL, MAINS FILTER

DOLBY BOARD

DIODES

6706	4822 130 30621	1N4148
6707	4822 130 30621	1N4148
6708	4822 130 30621	1N4148
6709	4822 130 30621	1N4148

TRANSISTORS

7641	4822 130 44196	BC548C
7642	4822 130 44196	BC548C
7653	4822 130 60588	DTC114ES
7706	4822 130 60588	DTC114ES
7744	4822 130 60588	DTC114ES
7745	4822 130 60588	DTC114ES
7746	4822 130 60588	DTC114ES
7750	4822 130 41344	BC337-40
7751	4822 130 42682	DTA144ES
7752	4822 130 44196	BC548C
7753	4822 130 60588	DTC114ES
7754	4822 130 44196	BC548C
7760	4822 130 41344	BC337-40
7763	4822 130 42682	DTA144ES
7764	4822 130 60588	DTC114ES
7765	4822 130 60588	DTC114ES
7767	4822 130 44196	BC548C
7768	4822 130 44196	BC548C
7776	4822 130 60588	DTC114ES
7781	4822 130 60588	DTC114ES
7782	4822 130 60588	DTC114ES
7783	4822 130 60588	DTC114ES
7785	4822 130 60588	DTC114ES
7792	4822 130 44197	BC558B
7797	4822 130 41344	BC337-40

INTEGRATED CIRCUITS

7635	4822 209 30498	HA12134A
7700	4822 209 70288	UPC1313HA
7701	4822 209 70288	UPC1313HA
7702	5322 209 14865	MC14066BCP
7703	5322 209 14865	MC14066BCP
7704	4822 209 61667	UPC1330HA
7770	4822 209 31505	CXA1298AP

COILS

5635	4822 242 73768	MPX-FILTER
5636	4822 242 73768	MPX-FILTER
5673	4822 156 20811	COIL 36µH
5674	4822 156 20811	COIL 36µH
5760	4822 157 70695	OSC. COIL (100kHz)

RESISTORS

3635	4822 116 52234	100k	5%	0,5W
3636	4822 116 52234	100k	5%	0,5W
3637	4822 116 52285	470k	5%	0,5W
3638	4822 116 52285	470k	5%	0,5W
3639	4822 116 52284	47k	5%	0,5W

RESISTORS

3640	4822 116 52284	47k	5%	0,5W
3641	4822 116 52243	1k5	5%	0,16W
3642	4822 116 52243	1k5	5%	0,16W
3643	4822 116 52269	3k3	5%	0,5W
3644	4822 116 52269	3k3	5%	0,5W
3645	4822 116 52289	5k6	5%	0,16W
3646	4822 116 52289	5k6	5%	0,16W
3647	4822 050 11002	1k	5%	0,2W
3648	4822 050 11002	1k	5%	0,2W
3649	4822 116 52251	18k	5%	0,5W
3650	4822 116 52224	470R	5%	0,5W
3651	4822 116 52257	22k	5%	0,5W
3652	4822 116 52257	22k	5%	0,5W
3653	4822 050 11002	1k	5%	0,2W
3655	4822 116 52233	10k	5%	0,5W
3656	4822 116 52233	10k	5%	0,5W
3657	4822 116 52233	10k	5%	0,5W
3658	4822 116 52233	10k	5%	0,5W
3659	4822 116 52257	22k	5%	0,5W
3660	4822 116 52257	22k	5%	0,5W
3661	4822 116 52244	15k	5%	0,5W
3662	4822 116 52244	15k	5%	0,5W
3663	4822 116 52289	5k6	5%	0,16W
3664	4822 116 52289	5k6	5%	0,16W
3665	4822 116 52244	15k	5%	0,5W
3666	4822 116 52289	5k6	5%	0,16W
3667	4822 100 11771	POTMETER 20k LIN		
3668	4822 100 11771	POTMETER 20k LIN		
3671	4822 050 11002	1k	5%	0,2W
3672	4822 050 11002	1k	5%	0,2W
3673	4822 116 52257	22k	5%	0,5W
3674	4822 116 52257	22k	5%	0,5W
3675	4822 051 10333	33k	2%	0,25W
3676	4822 051 10333	33k	2%	0,25W
3677	4822 116 52257	22k	5%	0,5W
3678	4822 050 11002	1k	5%	0,2W
3679	4822 116 52251	18k	5%	0,5W
3697	4822 116 52224	470R	5%	0,5W
3698	4822 116 52224	470R	5%	0,5W
3699	4822 116 52224	470R	5%	0,5W
3700	4822 116 52224	470R	5%	0,5W
3701	4822 116 52231	820R	5%	0,5W
3702	4822 116 52231	820R	5%	0,5W
3703	4822 116 52265	270k	5%	0,5W
3704	4822 116 52265	270k	5%	0,5W
3705	4822 116 52238	12k	5%	0,5W
3706	4822 116 52238	12k	5%	0,5W
3707	4822 116 52195	47R	5%	0,5W
3708	4822 116 52195	47R	5%	0,5W
3709	4822 116 52256	2k2	5%	0,16W
3710	4822 116 52256	2k2	5%	0,16W
3711	4822 116 52269	3k3	5%	0,5W
3712	4822 116 52269	3k3	5%	0,5W
3713	4822 116 52224	470R	5%	0,5W
3717	4822 116 52224	470R	5%	0,5W

RESISTORS

3718	4822 116 52224	470R	5%	0,5W
3719	4822 116 52224	470R	5%	0,5W
3720	4822 116 52224	470R	5%	0,5W
3721	4822 116 52224	470R	5%	0,5W
3722	4822 116 52224	470R	5%	0,5W
3723	4822 116 52265	270k	5%	0,5W
3724	4822 116 52265	270k	5%	0,5W
3725	4822 116 52238	12k	5%	0,5W
3726	4822 116 52238	12k	5%	0,5W
3727	4822 116 52195	47R	5%	0,5W
3728	4822 116 52195	47R	5%	0,5W
3729	4822 116 52256	2k2	5%	0,16W
3730	4822 116 52256	2k2	5%	0,16W
3731	4822 116 52269	3k3	5%	0,5W
3732	4822 116 52269	3k3	5%	0,5W
3733	4822 116 52224	470R	5%	0,5W
3734	4822 116 52228	680R	5%	0,5W
3736	4822 050 11002	1k	5%	0,2W
3737	4822 050 11002	1k	5%	0,2W
3738	4822 116 52228	680R	5%	0,5W
3743	4822 116 52303	8k2	5%	0,5W
3744	4822 116 52303	8k2	5%	0,5W
3745	4822 116 52231	820R	5%	0,5W
3746	4822 116 52231	820R	5%	0,5W
3747	4822 116 52224	470R	5%	0,5W
3751	4822 116 52233	10k	5%	0,5W
3752	4822 116 52257	22k	5%	0,5W
3753	4822 116 52263	2k7	5%	0,5W
3754	4822 116 52207	1k2	5%	0,5W
3755	4822 116 52233	10k	5%	0,5W
3756	4822 100 11771	POTMETER 20k LIN		
3757	4822 052 10478	4R7	5%	NFR
3758	4822 116 52191	33R	5%	0,5W
3759	4822 116 52296	6k8	5%	0,5W
3761	4822 116 52176	10R	5%	0,5W
3762	4822 116 52176	10R	5%	0,5W
3763	5322 100 11539	POTMETER 100k LIN		
3764	5322 100 11539	POTMETER 100k LIN		
3765	4822 116 52283	4k7	5%	0,5W
3766	4822 116 52256	2k2	5%	0,16W
3767	4822 116 52257	22k	5%	0,5W
3768	4822 116 52233	10k	5%	0,5W
3769	4822 116 52224	470R	5%	0,5W
3770	4822 116 52224	470R	5%	0,5W
3771	4822 050 11002	1k	5%	0,2W
3772	4822 050 11002	1k	5%	0,2W
3773	4822 050 11002	1k	5%	0,2W
3774	4822 051 10333	33k	2%	0,25W
3775	4822 116 52238	12k	5%	0,5W
3776	4822 116 52283	4k7	5%	0,5W
3777	4822 116 52175	100R	5%	0,5W
3778	4822 116 52175	100R	5%	0,5W
3779	4822 116 52251	18k	5%	0,5W
3780	4822 116 52251	18k	5%	0,5W
3781	4822 050 11002	1k	5%	0,2W
3783	4822 116 52244	15k	5%	0,5W
3784	4822 116 52289	5k6	5%	0,16W
3785	4822 116 52244	15k	5%	0,5W
3786	4822 116 52244	15k	5%	0,5W
3787	4822 100 11771	POTMETER 20k LIN		

RESISTORS

3789	4822 116 52252	180k	5%	0,5W
3790	4822 116 52263	2k7	5%	0,5W
3792	4822 116 52284	47k	5%	0,5W
3796	4822 116 52283	4k7	5%	0,5W
3798	4822 116 52238	12k	5%	0,5W

CAPACITORS

2635	4822 124 40242	1µF	20%	63V
2636	4822 124 40242	1µF	20%	63V
2637	4822 122 33069	33pF	5%	50V
2638	4822 122 33069	33pF	5%	50V
2639	4822 124 40242	1µF	20%	63V
2640	4822 124 40242	1µF	20%	63V
2641	4822 126 10329	68pF	5%	50V
2642	4822 126 10329	68pF	5%	50V
2645	4822 122 10577	3,3nF	10%	16V
2646	4822 122 10577	3,3nF	10%	16V
2647	4822 124 40435	10µF	20%	50V
2648	4822 124 40435	10µF	20%	50V
2649	4822 124 40242	1µF	20%	63V
2650	4822 124 40196	220µF	20%	16V
2651	4822 122 33519	470pF	10%	50V
2652	5322 124 41431	22µF	20%	25V
2653	4822 124 40248	10µF	20%	63V
2655	4822 124 40242	1µF	20%	63V
2656	4822 124 40242	1µF	20%	63V
2657	4822 124 40248	10µF	20%	63V
2658	4822 124 40248	10µF	20%	63V
2659	4822 124 40248	10µF	20%	63V
2660	4822 124 40248	10µF	20%	63V
2663	4822 121 42408	220nF	5%	63V
2664	4822 121 42408	220nF	5%	63V
2665	4822 122 33519	470pF	10%	50V
2666	4822 122 33519	470pF	10%	50V
2667	4822 122 33519	470pF	10%	50V
2668	4822 122 33519	470pF	10%	50V
2669	4822 122 33519	470pF	10%	50V
2670	4822 122 33519	470pF	10%	50V
2673	4822 122 10458	82pF	10%	50V
2674	4822 122 10458	82pF	10%	50V
2675	4822 122 33519	470pF	10%	50V
2676	4822 122 33519	470pF	10%	50V
2677	4822 124 41643	100µF	20%	16V
2699	4822 126 10178	820pF	10%	50V
2700	4822 126 10178	820pF	10%	50V
2701	4822 126 12332	100pF	5%	50V
2702	4822 126 12332	100pF	5%	50V
2703	4822 124 41643	100µF	20%	16V
2704	4822 124 41643	100µF	20%	16V
2705	4822 121 41815	10nF	10%	100V
2706	4822 121 41815	10nF	10%	100V
2707	4822 126 11585	22nF		50V
2708	4822 126 11585	22nF		50V
2709	4822 124 40242	1µF	20%	63V
2710	4822 124 40242	1µF	20%	63V
2712	4822 122 33519	470pF	10%	50V
2713	4822 124 40196	220µF	20%	16V

CAPACITORS

2719	4822 126 10178	820pF	10%	50V
2720	4822 126 10178	820pF	10%	50V
2721	4822 126 12332	100pF	5%	50V
2722	4822 126 12332	100pF	5%	50V
2723	4822 124 41643	100µF	20%	16V
2724	4822 124 41643	100µF	20%	16V
2725	4822 121 41815	10nF	10%	100V
2726	4822 121 41815	10nF	10%	100V
2727	4822 126 11585	22nF		50V
2728	4822 126 11585	22nF		50V
2729	4822 124 40242	1µF	20%	63V
2730	4822 124 40242	1µF	20%	63V
2732	4822 122 33519	470pF	10%	50V
2733	4822 124 40196	220µF	20%	16V
2739	4822 126 10781	470pF	5%	50V
2740	4822 122 33519	470pF	10%	50V
2741	4822 124 41643	100µF	20%	16V
2747	4822 124 41643	100µF	20%	16V
2752	4822 124 40433	47µF	20%	25V
2755	4822 124 40242	1µF	20%	63V
2757	4822 124 40433	47µF	20%	25V
2759	4822 126 11714	4,7nF	20%	
2760	4822 121 51387	10nF	20%	16V
2762	4822 124 40239	0,47µF	20%	63V
2763	4822 126 10329	68pF	5%	50V
2764	4822 126 10329	68pF	5%	50V
2765	4822 121 51093	6,8nF	5%	250V
2768	4822 124 41643	100µF	20%	16V
2769	4822 122 33519	470pF	10%	50V
2770	4822 124 40196	220µF	20%	16V
2771	4822 126 11714	4,7nF	20%	
2772	4822 126 11714	4,7nF	20%	
2773	4822 126 11714	4,7nF	20%	
2774	4822 124 40246	4,7µF	20%	63V
2775	4822 124 40433	47µF	20%	25V
2776	4822 124 40242	1µF	20%	63V
2777	4822 124 40242	1µF	20%	63V
2778	4822 124 40242	1µF	20%	63V
2779	4822 126 10178	820pF	10%	50V
2780	4822 126 10178	820pF	10%	50V
2781	4822 126 11585	22nF		50V
2782	4822 126 11585	22nF		50V
2783	4822 124 40242	1µF	20%	63V
2784	4822 124 40242	1µF	20%	63V
2785	4822 126 11592	1nF	10%	50V
2786	4822 126 11592	1nF	10%	50V
2789	4822 124 40246	4,7µF	20%	63V
2790	4822 124 40246	4,7µF	20%	63V
2791	4822 121 51387	10nF	20%	16V
2792	4822 121 51387	10nF	20%	16V

TUNER ECO4

MISCELLANEOUS

1101	4822 267 10283	SOCKET COAX IEC 75R
1101	4822 265 20598	F-CONNECT. COAX 75R

DIODES

6105	4822 130 83075	HN1V02H
6109	4822 130 82833	1SV228
6122	4822 130 30621	1N4148
6121	4822 130 30621	1N4148
6123	4822 130 30621	1N4148
6124	4822 130 82833	1SV228
6140	4822 130 30621	1N4148
6154	4822 130 30621	1N4148
6174	4822 130 34233	BZX79-B5V1

TRANSISTORS

7102	5322 130 42136	BC848C(CHIP)
7104	5322 130 42136	BC848C(CHIP)
7105	4822 130 60093	2SA838B
7120	4822 130 60163	2SC1047
7121	5322 130 42136	BC848C(CHIP)
7123	5322 130 42136	BC848C(CHIP)
7128	5322 130 42136	BC848C(CHIP)
7152	5322 130 41983	BC858B(CHIP)
7156	4822 130 41344	BC337-40
7157	4822 130 41344	BC337-40
7169	5322 130 42136	BC848C(CHIP)
7170	5322 130 42136	BC848C(CHIP)
7171	5322 130 42136	BC848C(CHIP)
7174	5322 130 41983	BC858B(CHIP)
7178	5322 130 41983	BC858B(CHIP)
7179	5322 130 42136	BC848C(CHIP)

INTEGRATED CIRCUITS

7140	4822 209 32011	TEA5712T/N1 (Radio-IC)
7140	4822 209 32701	TEA5712T/N2 (Radio-IC)
7150	5322 209 14482	HEF4069UBT (6xINVERTER)
7172	4822 209 30606	MM74HCU04M (6xINVERTER)
7173	4822 209 31998	LC7218M SYNTHESIZER

COILS

5105	4822 158 60641	Ferrite ant.,MW/LW
5106	4822 158 60642	Ferrite ant.,MW
5109	4822 156 30947	RF COIL var. 1,5 TURNS
5120	4822 156 30947	RF COIL var. 1,5 TURNS
5122	4822 157 60517	COIL var. 110µH 8%

COILS

5123	4822 157 60517	COIL var. 110µH 8%
5140	4822 158 60511	AM-IF FILTER 450kHz
5142	4822 157 70302	AM-IF FILTER 450kHz
5143	4822 242 70665	CER. FILTER 10,7MHZ
5144	4822 242 70665	CER. FILTER 10,7MHZ
5145	4822 242 81362	CER. DISCRIMINATOR
5150	4822 157 50975	1mµH 10%
5170	4822 242 72976	CER.RESONATOR 7,2MHz

RESISTORS

3119	4822 116 52224	470R	5%	0,5W
3120	4822 116 52289	5k6	5%	0,16W
3124	4822 116 52256	2k2	5%	0,16W
3132	4822 116 52283	4k7	5%	0,5W
3141	4822 116 52215	220R	5%	0,1 6W
3148	4822 100 11163	POTMETER 100k LIN.		
3151	4822 116 52243	1k5	5%	0,16W
3156	4822 116 52233	10k	5%	0,5W
3162	4822 050 11002	1k	5%	0,2W
3163	4822 050 11002	1k	5%	0,2W
3164	4822 116 52283	4k7	5%	0,5W
3165	4822 116 52283	4k7	5%	0,5W
3173	4822 116 52244	15k	5%	0,5W
3174	4822 116 52233	10k	5%	0,5W
3177	4822 116 52233	10k	5%	0,5W
3181	4822 116 52234	100k	5%	0,5W
3189	4822 116 52249	1k8	5%	0,16W
3190	4822 116 52249	1k8	5%	0,16W
3191	4822 116 52249	1k8	5%	0,16W
3192	4822 116 52249	1k8	5%	0,16W
3193	4822 116 52224	470R	5%	0,5W
3194	4822 050 24701	470R	5%	
3195	4822 050 24701	470R	5%	
3197	4822 050 24701	470R	5%	
3201	4822 116 52176	10R	5%	0,16W

CHIP RESISTORS

3106	4822 051 20104	100k	5%	0,1W
3107	4822 051 20222	2k2	5%	0,1W
3108	4822 051 20104	100k	5%	0,1W
3109	4822 051 20222	2k2	5%	0,1W
3110	4822 051 20473	47k	5%	0,1W
3111	4822 051 20153	15k	5%	0,1W
3112	4822 051 20223	22k	5%	0,1W
3116	4822 051 20335	3M3	5%	0,1W
3121	4822 051 20104	100k	5%	0,1W
3122	4822 051 20471	470R	5%	0,1W
3123	4822 051 20223	22k	5%	0,1W
3125	4822 051 20472	4k7	5%	0,1W
3128	4822 051 20222	2k2	5%	0,1W
3129	4822 051 20472	4k7	5%	0,1W
3142	4822 051 20222	2k2	5%	0,1W

CHIP RESISTORS

3144	4822 051 20473	47k	5%	0,1W
3147	4822 051 20184	180k	5%	0,1W
3149	4822 051 20563	56k	5%	0,1W
3154	4822 051 20333	33k	5%	0,1W
3155	4822 051 20333	33k	5%	0,1W
3157	4822 051 20273	27k	5%	0,1W
3158	4822 051 20189	18R	5%	0,1W
3159	4822 051 20184	180k	5%	0,1W
3160	4822 051 20823	82k	5%	0,1W
3161	4822 051 20823	82k	5%	0,1W
3166	4822 051 20101	100R	5%	0,1W
3167	4822 051 20008	CHIP JUMPER 0805		
3171	4822 051 20101	100R	5%	0,1W
3172	4822 051 20472	4k7	5%	0,1W
3175	4822 051 20104	100k	5%	0,1W
3176	4822 051 20104	100k	5%	0,1W
3178	4822 051 20332	3k3	5%	0,1W
3179	4822 051 20273	27k	5%	0,1W
3180	4822 051 20333	33k	5%	0,1W
3183	4822 051 20223	22k	5%	0,1W
3184	4822 051 20223	22k	5%	0,1W
3185	4822 051 20472	4k7	5%	0,1W
3186	4822 051 20183	18k	5%	0,1W
3188	4822 051 10102	1k	2%	0,25W
3200	4822 051 20223	22k	5%	0,1W
3211	4822 051 10008	CHIP JUMPER 1206		
3212	4822 051 10008	CHIP JUMPER 1206		
3213	4822 051 10008	CHIP JUMPER 1206		
3220	4822 051 20008	CHIP JUMPER 0805		
3222	4822 051 20008	CHIP JUMPER 0805		
3223	4822 051 20008	CHIP JUMPER 0805		
3224	4822 051 20008	CHIP JUMPER 0805		
3226	4822 051 20008	CHIP JUMPER 0805		
3228	4822 051 10008	CHIP JUMPER 1206		
3229	4822 051 20008	CHIP JUMPER 0805		
3233	4822 051 20008	CHIP JUMPER 0805		
3235	4822 051 10008	CHIP JUMPER 1206		
3237	4822 051 10008	CHIP JUMPER 1206		
3238	4822 051 20008	CHIP JUMPER 0805		
3240	4822 051 10008	CHIP JUMPER 1206		
3241	4822 051 20008	CHIP JUMPER 0805		
3242	4822 051 10008	CHIP JUMPER 1206		
3243	4822 051 20008	CHIP JUMPER 0805		
3244	4822 051 20008	CHIP JUMPER 0805		
3245	4822 051 20008	CHIP JUMPER 0805		
3246	4822 051 10008	CHIP JUMPER 1206		
3247	4822 051 10008	CHIP JUMPER 1206		
3248	4822 051 20008	CHIP JUMPER 0805		
3249	4822 051 20153	15k	5%	0,1W
3249	4822 051 20821	820R	5%	0,1W

CAPACITORS

2100	4822 122 33195	100pF	10%	50V
2104	4822 122 33195	100pF	10%	50V
2107	4822 122 31746	1nF	5%	50V
2115	4822 125 60101	10pF	VARIABLE	
2122	4822 122 31746	1nF	5%	50V

CAPACITORS

2123	4822 122 31746	1nF	5%	50V
2124	4822 121 51387	10nF	20%	16V
2129	4822 121 43705	390pF	1%	160V
2130	4822 125 50355	4,2 - 20pF	VARIABLE	
2134	4822 122 33197	1nF	10%	50V
2135	4822 121 70245	560pF	1%	160V
2141	4822 124 40244	2,2µF	20%	63V
2142	4822 124 40242	1µF	20%	63V
2150	4822 124 40435	10µF	20%	50V
2151	4822 124 40435	10µF	20%	50V
2156	5322 126 10181	100nF		25V
2157	5322 126 10181	100nF		25V
2158	4822 122 31746	1nF	5%	50V
2159	4822 122 31746	1nF	5%	50V
2160	4822 124 40242	1µF	20%	63V
2161	4822 124 40242	1µF	20%	63V
2162	4822 124 40242	1µF	20%	63V
2172	4822 124 41631	1,5µF	20%	50V
2173	4822 124 40433	47µF	20%	25V
2177	5322 126 10181	100nF		25V
2178	4822 122 33197	1nF	10%	50V
2179	4822 122 33195	100pF	10%	50V
2184	4822 124 41584	100µF	20%	10V
2186	4822 122 31746	1nF	5%	50V

CHIP CAPACITORS

2110	5322 122 32659	33pF	5%	50V
2110	5322 122 32269	6,8pF	5%	50V
2112	4822 122 33496	100nF	10%	63V
2114	5322 122 32531	100pF	5%	50V
2120	5322 122 32268	470pF	10%	50V
2121	5322 122 32481	15pF	5%	50V
2133	4822 122 33177	10nF	20%	50V
2138	5322 122 32658	22pF	5%	50V
2138	5322 122 32658	22pF	5%	50V
2139	4822 122 32627	2,2nF	10%	50V
2143	4822 122 33325	470nF	20%	50V
2144	4822 122 33325	470nF	20%	50V
2145	4822 122 33496	100nF	10%	63V
2146	5322 122 33063	2,2pF	10%	50V
2147	4822 122 33177	10nF	20%	50V
2152	4822 122 33496	100nF	10%	63V
2154	4822 122 33177	10nF	20%	50V
2154	4822 122 33128	15nF	20%	50V
2155	4822 122 33177	10nF	20%	50V
2155	4822 122 33128	15nF	20%	50V
2158	4822 122 31768	180pF	5%	50V
2159	4822 122 31768	180pF	5%	50V
2168	4822 122 33481	1,8nF	5%	NP0
2169	5322 122 31863	330pF	5%	50V
2170	5322 126 10223	4,7nF	10%	63V
2171	5322 126 10223	4,7nF	10%	63V
2174	5322 116 80853	560pF	5%	63V
2175	5322 122 32531	100pF	5%	50V
2180	5322 122 31946	27pF	5%	50V
2181	4822 122 32139	12pF	5%	63V

CHIP CAPACITORS

2183	4822 122 33496	100nF	10%	63V
2185	4822 122 33496	100nF	10%	63V
2193	4822 122 33496	100nF	10%	63V

TUNER 92

MISCELLANEOUS

1101	4822 210 10492	FRONTEND ASSY
1110	4822 267 10283	SOCKET COAX IEC 75R

DIODES

6101	4822 130 34174	BZX79-C4V7
6102	4822 130 83075	HN1V02H
6109	4822 130 30621	1N4148

TRANSISTORS

7101	4822 130 60163	2SC1047
7104	5322 130 60068	BC558C
7106	5322 130 60068	BC558C
7107	5322 130 41982	BC848 (CHIP)
7108	4822 130 44196	BC548C
7109	4822 130 44196	BC548C
7111	5322 130 41982	BC848 (CHIP)
7112	4822 130 60163	2SC1047
7113	4822 130 44196	BC548C
7114	4822 130 40937	BC548B
7115	4822 130 41024	BF245B
7116	4822 130 60163	2SC1047
7119	5322 130 41983	BC858B(CHIP)
7120	4822 130 44196	BC548C
7150	5322 130 44779	BC338-40
7157	5322 130 44779	BC338-40

INTEGRATED CIRCUITS

7103	4822 209 31001	LA1851N
7105	4822 209 30178	LC7218

COILS

5101	4822 157 53192	0,22µH
5103	4822 242 81249	CER. FILTER 10,7MHz
5104	4822 157 63029	AM IF COIL
5105	4822 157 63904	Q-DETECION COIL
5106	4822 157 63802	BIRDY FILTER
5107	4822 157 63799	ANT. COIL MW 3-BAND
5108	4822 157 63912	OSC.COIL AM 3-BAND
5110	4822 242 71878	CERAM.FILTER 450kHz
5111	4822 242 81248	CERAM. RES. 19kHz
5112	4822 242 72976	CER.RESONATOR 7,2MHz
5113	4822 242 81249	CER. FILTER 10,7MHz
5114	4822 152 20699	560µH
5127	4822 158 60643	FERROCEPTOR

RESISTORS

3100	4822 050 21501	150R	1%	0,6W
3108	4822 116 52224	470R	5%	0,5W
3113	4822 050 22201	220R	2%	0,25W
3118	4822 116 52215	220R	5%	0,16W
3120	4822 052 10229	22R	5%	0,33W

RESISTORS

3125	4822 100 11213	22k	30%	POT.
3131	4822 100 11319	4k7 trimpot.		
3134	4822 050 15602	5k6	1%	0,4W
3138	4822 116 83922	150R	5%	1W
3147	4822 050 15602	5k6	1%	0,4W
3150	4822 050 25601	560R	1%	0,6W
3151	4822 050 24702	4k7	1%	0,6W
3155	4822 050 22201	220R	2%	0,25W
3158	4822 050 24702	4k7	1%	0,6W
3162	4822 050 22701	270R	1%	0,6W
3165	4822 050 21002	1k	1%	0,6W
3166	4822 050 21002	1k	1%	0,6W
3167	4822 050 21002	1k	1%	0,6W
3183	4822 050 21003	10k	2%	0,25W
3186	4822 050 21003	10k	2%	0,25W
3225	4822 050 21002	1k	1%	0,6W
3244	5322 116 44005	PTC 250R	25%	

CHIP RESISTORS

3102	4822 051 20224	220k	5%	0,1W
3104	4822 051 20154	150k	5%	0,1W
3105	4822 051 20562	5k6	5%	0,1W
3106	4822 051 20829	82R	5%	0,1W
3107	4822 051 20104	100k	5%	0,1W
3114	4822 051 20332	3k3	5%	0,1W
3115	4822 051 20391	390R	5%	0,1W
3116	4822 051 20478	4R7	5%	0,1W
3117	4822 051 20331	330R	5%	0,1W
3121	4822 051 20272	2k7	5%	0,1W
3122	4822 051 20562	5k6	5%	0,1W
3123	4822 051 20223	22k	5%	0,1W
3124	4822 051 20103	10k	5%	0,1W
3126	4822 051 20123	12k	2%	0,1W
3127	4822 051 20562	5k6	5%	0,1W
3128	4822 051 20562	5k6	5%	0,1W
3129	4822 051 20103	10k	5%	0,1W
3132	4822 051 20183	18k	5%	0,1W
3133	4822 051 20008	CHIP JUMPER 0805		
3135	4822 051 10008	CHIP JUMPER 1206		
3141	4822 051 20472	4k7	5%	0,1W
3142	4822 051 20472	4k7	5%	0,1W
3143	4822 051 20821	820R	5%	0,1W
3144	4822 051 20331	330R	5%	0,1W
3145	4822 051 20271	270R	5%	0,1W
3148	4822 051 20104	100k	5%	0,1W
3149	4822 051 20472	4k7	5%	0,1W
3152	4822 051 20103	10k	5%	0,1W
3153	4822 051 20274	270k	5%	0,1W
3156	4822 051 20153	15k	5%	0,1W
3157	4822 051 20472	4k7	5%	0,1W
3159	4822 051 20104	100k	5%	0,1W
3160	4822 051 20104	100k	5%	0,1W
3163	4822 051 20103	10k	5%	0,1W
3164	4822 051 20473	47k	5%	0,1W
3170	4822 051 20103	10k	5%	0,1W
3171	4822 051 20223	22k	5%	0,1W
3172	4822 051 20472	4k7	5%	0,1W
3173	4822 051 20223	22k	5%	0,1W
3184	4822 051 20332	3k3	5%	0,1W

CHIP RESISTORS

3185	4822 051 20103	10k	5%	0,1W
3187	4822 051 20103	10k	5%	0,1W
3190	4822 051 20479	47R	5%	0,1W
3194	4822 051 20472	4k7	5%	0,1W
3196	4822 051 20008	CHIP JUMPER 0805		
3197	4822 051 20008	CHIP JUMPER 0805		
3198	4822 051 20103	10k	5%	0,1W
3200	4822 051 20008	CHIP JUMPER 0805		
3201	4822 051 20103	10k	5%	0,1W
3202	4822 051 20008	CHIP JUMPER 0805		
3223	4822 051 20474	470k	5%	0,1W
3230	4822 051 20223	22k	5%	0,1W
3231	4822 051 20223	22k	5%	0,1W
3233	4822 051 10102	1k	2%	0,25W
3236	4822 051 20008	CHIP JUMPER 0805		
3240	4822 051 20472	4k7	5%	0,1W

CAPACITORS

2103	4822 124 40433	47µF	20%	25V
2104	4822 121 42408	220nF	5%	63V
2107	4822 122 31385	22pF	5%	50V
2114	5322 124 41431	22µF	20%	25V
2115	4822 124 40239	0,47µF	20%	63V
2116	5322 121 42386	100nF	5%	63V
2117	4822 121 41935	12nF	5%	250V
2118	4822 121 41935	12nF	5%	250V
2119	4822 124 40244	2,2µF	20%	63V
2120	4822 124 40244	2,2µF	20%	63V
2121	4822 124 40196	220µF	20%	16V
2123	4822 124 40246	4,7µF	20%	63V
2124	4822 124 40246	4,7µF	20%	63V
2129	4822 124 40242	1µF	20%	63V
2131	4822 124 40435	10µF	20%	50V
2142	4822 125 60102	30pF VARIABLE		
2144	4822 121 42408	220nF	5%	63V
2145	4822 121 51263	510pF	1%	400V
2146	4822 121 70082	430pF	1%	400V
2152	4822 124 40242	1µF	20%	63V
2156	4822 124 40433	47µF	20%	25V
2160	4822 124 41631	1,5µF	20%	50V
2162	4822 122 10166	22nF	30%	16V
2165	4822 124 40433	47µF	20%	25V
2193	4822 125 60102	30pF VARIABLE		
2194	4822 125 60101	10pF VARIABLE		
2210	4822 124 41643	100µF	20%	16V

CHIP CAPACITORS

2101	5322 122 34099	470pF	10%	63V
2102	5322 122 32268	470pF	10%	50V
2105	5322 122 32965	18pF	5%	50V
2108	5322 122 32654	22nF	10%	63V
2109	5322 122 32654	22nF	10%	63V
2110	5322 122 32654	22nF	10%	63V
2112	5322 122 32654	22nF	10%	63V
2113	5322 122 32661	56pF	5%	50V
2125	4822 122 33177	10nF	20%	50V
2126	4822 122 31782	15nF	10%	50V

CHIP CAPACITORS

2147	5322 122 32654	22nF	10%	63V
2148	5322 122 32452	47pF	5%	50V
2149	4822 122 33177	10nF	20%	50V
2150	5322 122 32654	22nF	10%	63V
2151	5322 122 34099	470pF	10%	63V
2153	5322 122 34099	470pF	10%	63V
2154	5322 122 32481	15pF	5%	50V
2155	5322 122 32965	18pF	5%	50V
2158	5322 126 10223	4,7nF	10%	63V
2159	5322 126 10223	4,7nF	10%	63V
2161	4822 122 32927	220nF	10%	63V
2195	5322 122 33861	120pF	5%	NP0
2196	5322 122 32448	10pF	5%	50V
2215	5322 122 32268	470pF	10%	50V
2216	5322 122 32268	470pF	10%	50V
2219	4822 122 32927	220nF	10%	63V
2221	5322 122 32268	470pF	10%	50V
2224	4822 122 31173	220pF	10%	500V
2225	4822 122 31173	220pF	10%	500V

CD BOARD

MISCELLANEOUS

1020	4822 071 51601	FUSE 160mA
1021	4822 071 51601	FUSE 160mA
1250	4822 267 30933	SOCKET CHINCH

DIODES

6103	4822 130 30621	1N4148
6550	4822 130 31981	BZX79-C3V9
6660	4822 130 34173	BZX79-C5V6

TRANSISTORS

7040	4822 130 60887	BF840
7041	5322 130 41982	BC848 (CHIP)
7042	5322 130 41983	BC858B(CHIP)
7043	5322 130 41982	BC848 (CHIP)
7044	5322 130 41982	BC848 (CHIP)
7140	5322 130 42012	BC858 (CHIP)
7141	4822 130 61207	BC848 (CHIP)
7360	4822 130 42804	BC817-25 (CHIP)
7361	4822 130 42804	BC817-25 (CHIP)
7362	5322 130 42012	BC858 (CHIP)
7550	5322 130 42012	BC858 (CHIP)

INTEGRATED CIRCUITS

7000	4822 209 31064	TDA1301T/N1
7060	4822 209 72587	TCA372DP2
7080	4822 209 72587	TCA372DP2
7101	4822 209 32036	UM6264BM-10L, RAM
7102	4822 209 30388	SAA7341GP
7300	4822 209 83274	NJM4560D
7301	4822 209 83274	NJM4560D
7500	4822 209 80891	MC7805CT
7660	4822 209 72587	TCA372DP2
7700	4822 900 10318	MC68HC05C8/SERVO-S17

COILS

1002	4822 242 73557	CERAMIC RES. 8,46MHz
1570	4822 242 81151	X-TAL 16,934MHz
1700	4822 242 72527	CERAMIC RES. 4.0 MHz
5250	4822 148 80281	COIL 100µH

RESISTORS

3000	4822 050 21003	10k	2%	0,25W
3001	4822 050 21003	10k	2%	0,25W
3002	4822 050 21003	10k	2%	0,25W
3003	4822 050 21003	10k	2%	0,25W
3004	4822 050 21003	10k	2%	0,25W
3005	4822 050 21003	10k	2%	0,25W
3007	4822 052 10338	3R3		NFR25
3008	4822 052 10338	3R3		NFR25
3014	4822 052 10478	4R7	5%	NFR
3015	4822 050 21002	1k	1%	0,6W

RESISTORS

3016	4822 050 21002	1k	1%	0,6W
3049	4822 050 24301	430R	1%	0,6W
3056	4822 050 21204	120k	1%	0,6W
3057	4822 050 25603	56k	1%	0,6W
3058	4822 050 21002	1k	1%	0,6W
3062	4822 116 52244	15k	5%	0,5W
3064	4822 050 21503	15k	1%	0,6W
3065	4822 052 10229	22R	5%	0,33W
3066	4822 052 10108	1R	5%	0,33W
3067	4822 052 10108	1R	5%	0,33W
3072	4822 050 26802	6k8	1%	0,6W
3073	4822 052 10229	22R	5%	0,33W
3074	4822 116 52244	15k	5%	0,5W
3075	4822 050 21003	10k	2%	0,25W
3081	4822 050 24702	4k7	1%	0,6W
3083	4822 052 10108	1R	5%	0,33W
3084	4822 052 10108	1R	5%	0,33W
3085	4822 050 21003	10k	2%	0,25W
3086	4822 052 10229	22R	5%	0,33W
3087	4822 116 52244	15k	5%	0,5W
3100	4822 050 22202	2k2	1%	0,6W
3103	4822 052 10338	3R3		NFR25
3105	4822 052 10338	3R3		NFR25
3111	4822 052 10229	22R	5%	0,33W
3112	4822 050 22205	2M2	1%	0,6W
3140	4822 116 52234	100k	5%	0,5W
3142	4822 050 24703	47k	1%	0,6W
3143	4822 052 10229	22R	5%	0,33W
3146	4822 050 21003	10k	2%	0,25W
3305	4822 052 10229	22R	5%	0,33W
3306	4822 052 10229	22R	5%	0,33W
3312	4822 050 22203	22k	1%	0,6W
3314	4822 050 21002	1k	1%	0,6W
3315	4822 050 21002	1k	1%	0,6W
3501	4822 052 10108	1R	5%	0,33W
3502	4822 052 10108	1R	5%	0,33W
3611	4822 116 52303	8k2	5%	0,5W
3615	4822 052 10108	1R	5%	0,33W
3616	4822 052 10108	1R	5%	0,33W
3617	4822 052 10229	22R	5%	0,33W
3701	4822 052 10338	3R3		NFR25

CHIP RESISTORS

3006	4822 051 20103	10k	5%	0,1W
3009	4822 051 20105	1M	5%	0,1W
3010	4822 051 20103	10k	5%	0,1W
3011	4822 051 20103	10k	5%	0,1W
3012	4822 051 10102	1k	2%	0,25W
3013	4822 051 10102	1k	2%	0,25W
3017	4822 051 10102	1k	2%	0,25W
3040	4822 051 10101	100R	5%	0,125W
3041	4822 051 20393	39k	5%	0,1W
3042	4822 051 20334	330k	5%	0,1W
3043	4822 051 20303	30k	5%	0,1W
3044	4822 051 10102	1k	2%	0,25W
3045	4822 051 20101	100R	5%	0,1W
3046	4822 051 10102	1k	2%	0,25W
3047	4822 051 20434	430k	5%	0,1W

CHIP RESISTORS

3048	4822 051 20101	100R	5%	0,1W
3050	4822 051 20434	430k	5%	0,1W
3051	4822 051 20182	1k8	5%	0,1W
3052	4822 051 20182	1k8	5%	0,1W
3053	4822 051 20392	3k9	5%	0,1W
3054	4822 051 20101	100R	5%	0,1W
3055	4822 051 20124	120k	5%	0,1W
3060	4822 117 10036	7k5	1%	0,1W
3061	4822 051 20682	6k8	5%	0,1W
3063	4822 051 20103	10k	5%	0,1W
3070	4822 051 20153	15k	5%	0,1W
3071	4822 051 20103	10k	5%	0,1W
3080	4822 051 20682	6k8	5%	0,1W
3082	4822 051 20153	15k	5%	0,1W
3101	4822 051 20223	22k	5%	0,1W
3102	4822 051 20223	22k	5%	0,1W
3106	4822 051 10102	1k	2%	0,25W
3109	4822 051 20222	2k2	5%	0,1W
3110	4822 051 20105	1M	5%	0,1W
3117	4822 051 20182	1k8	5%	0,1W
3118	4822 051 20182	1k8	5%	0,1W
3119	4822 051 10561	560R	2%	0,25W
3141	4822 051 20104	100k	5%	0,1W
3144	4822 051 20223	22k	5%	0,1W
3147	4822 051 20392	3k9	5%	0,1W
3148	4822 051 20473	47k	5%	0,1W
3255	4822 051 10561	560R	2%	0,25W
3256	4822 051 20621	620R	5%	0,1W
3300	4822 051 20104	100k	5%	0,1W
3301	4822 051 20273	27k	5%	0,1W
3302	4822 051 20332	3k3	5%	0,1W
3303	4822 051 20123	12k	2%	0,1W
3304	4822 051 20123	12k	2%	0,1W
3307	4822 051 20332	3k3	5%	0,1W
3308	4822 051 20123	12k	2%	0,1W
3309	4822 051 20104	100k	5%	0,1W
3310	4822 051 20273	27k	5%	0,1W
3311	4822 051 20123	12k	2%	0,1W
3313	4822 051 20223	22k	5%	0,1W
3320	4822 116 83933	15k	1%	0,1W
3321	4822 116 83933	15k	1%	0,1W
3322	4822 116 83933	15k	1%	0,1W
3323	4822 116 83933	15k	1%	0,1W
3325	4822 116 83933	15k	1%	0,1W
3326	4822 116 83933	15k	1%	0,1W
3327	4822 116 83933	15k	1%	0,1W
3328	4822 116 83933	15k	1%	0,1W
3360	4822 051 10102	1k	2%	0,25W
3361	4822 051 10102	1k	2%	0,25W
3550	4822 051 20561	560R	5%	0,1W
3551	4822 051 10102	1k	2%	0,25W
3552	4822 051 20223	22k	5%	0,1W
3553	4822 051 10102	1k	2%	0,25W
3610	4822 051 20123	12k	2%	0,1W
3612	4822 051 20123	12k	2%	0,1W
3613	4822 051 20123	12k	2%	0,1W
3614	4822 051 20123	12k	2%	0,1W
3662	4822 051 20103	10k	5%	0,1W
3663	4822 051 20103	10k	5%	0,1W
3664	4822 051 20103	10k	5%	0,1W

CHIP RESISTORS

3665	4822 051 20561	560R	5%	0,1W
3700	4822 051 20224	220k	5%	0,1W
3706	4822 051 20103	10k	5%	0,1W
3707	4822 051 20103	10k	5%	0,1W
3708	4822 051 20103	10k	5%	0,1W
3710	4822 051 20103	10k	5%	0,1W
3711	4822 051 20332	3k3	5%	0,1W
3713	4822 051 20103	10k	5%	0,1W
3714	4822 051 20103	10k	5%	0,1W
3715	4822 051 20332	3k3	5%	0,1W
3716	4822 051 20103	10k	5%	0,1W
3717	4822 051 20103	10k	5%	0,1W
3718	4822 051 20103	10k	5%	0,1W
3719	4822 051 20103	10k	5%	0,1W
3720	4822 051 20103	10k	5%	0,1W
3721	4822 051 20103	10k	5%	0,1W
3722	4822 051 10102	1k	2%	0,25W
3723	4822 051 10102	1k	2%	0,25W
3724	4822 051 10102	1k	2%	0,25W
4000	4822 051 10008	CHIP JUMPER 1206		
4001	4822 051 10008	CHIP JUMPER 1206		
4002	4822 051 10008	CHIP JUMPER 1206		
4003	4822 051 10008	CHIP JUMPER 1206		
4004	4822 051 10008	CHIP JUMPER 1206		
4104	4822 051 10008	CHIP JUMPER 1206		
4105	4822 051 10008	CHIP JUMPER 1206		
4106	4822 051 10008	CHIP JUMPER 1206		
4107	4822 051 10008	CHIP JUMPER 1206		
4108	4822 051 10008	CHIP JUMPER 1206		
4109	4822 051 10008	CHIP JUMPER 1206		
4200	4822 051 10008	CHIP JUMPER 1206		
4302	4822 051 10008	CHIP JUMPER 1206		
4600	4822 051 10008	CHIP JUMPER 1206		
4700	4822 051 10008	CHIP JUMPER 1206		
4701	4822 051 10008	CHIP JUMPER 1206		

CAPACITORS

2010	5322 124 21643	22µF	20%	40V
2012	4822 124 40272	33µF	20%	16V
2015	5322 124 21643	22µF	20%	40V
2017	5322 124 21643	22µF	20%	40V
2042	5322 124 21643	22µF	20%	40V
2052	5322 124 21643	22µF	20%	40V
2062	4822 124 40272	33µF	20%	16V
2063	4822 124 40272	33µF	20%	16V
2081	5322 124 21643	22µF	20%	40V
2083	5322 124 21643	22µF	20%	40V
2103	4822 124 40849	330µF	20%	16V
2105	5322 121 42661	330nF	5%	63V
2107	4822 124 41584	100µF	20%	10V
2109	4822 124 40242	1µF	20%	63V
2111	5322 121 42386	100nF	5%	63V
2116	4822 124 40242	1µF	20%	63V
2119	4822 124 41584	100µF	20%	10V
2122	4822 124 40849	330µF	20%	16V
2301	4822 124 40272	33µF	20%	16V
2302	4822 124 40246	4,7µF	20%	63V

CAPACITORS

2304	4822 124 40272	33µF	20%	16V
2305	4822 124 40246	4,7µF	20%	63V
2311	4822 124 40246	4,7µF	20%	63V
2500	4822 124 80148	2200µF	20%	16V
2502	4822 124 41853	1000µF	20%	16V
2702	4822 124 40272	33µF	20%	16V

CHIP CAPACITORS

2000	5322 122 31865	1,5nF	10%	63V
2001	5322 116 80853	560pF	5%	63V
2003	4822 122 31173	220pF	10%	500V
2004	4822 122 31173	220pF	10%	500V
2005	4822 122 31173	220pF	10%	500V
2006	4822 122 31173	220pF	10%	500V
2007	4822 122 31173	220pF	10%	500V
2008	4822 122 31173	220pF	10%	500V
2009	4822 122 33496	100nF	10%	63V
2011	4822 122 33496	100nF	10%	63V
2016	4822 122 33496	100nF	10%	63V
2018	4822 122 33496	100nF	10%	63V
2019	4822 122 33809	22nF	20%	50V
2040	5322 122 32654	22nF	10%	63V
2041	4822 126 10326	180pF	5%	
2043	5322 122 31863	330pF	5%	50V
2044	4822 126 10326	180pF	5%	
2045	5322 122 32452	47pF	5%	50V
2046	5322 122 32452	47pF	5%	50V
2047	5322 122 32531	100pF	5%	50V
2048	5322 122 32965	18pF	5%	50V
2049	4822 126 10326	180pF	5%	
2050	4822 126 10326	180pF	5%	
2051	5322 122 31863	330pF	5%	50V
2060	4822 122 33496	100nF	10%	63V
2061	4822 122 33496	100nF	10%	63V
2064	4822 122 33342	33nF	10%	63V
2065	4822 122 33496	100nF	10%	63V
2066	4822 122 33175	2,2nF	20%	50V
2070	4822 122 32627	2,2nF	10%	50V
2071	4822 122 33496	100nF	10%	63V
2072	4822 126 10326	180pF	5%	
2080	4822 122 33496	100nF	10%	63V
2082	4822 122 33496	100nF	10%	63V
2084	4822 126 10326	180pF	5%	
2085	4822 122 33496	100nF	10%	63V
2086	5322 126 10465	3,9nF	10%	63V
2101	5322 122 32452	47pF	5%	50V
2102	4822 122 33175	2,2nF	20%	50V
2104	4822 122 33496	100nF	10%	63V
2106	4822 122 33496	100nF	10%	63V
2108	4822 122 33809	22nF	20%	50V
2110	5322 122 32659	33pF	5%	50V
2112	4822 122 33496	100nF	10%	63V
2114	5322 122 32452	47pF	5%	50V
2115	5322 122 32452	47pF	5%	50V
2117	5322 126 10223	4,7nF	10%	63V
2118	5322 126 10223	4,7nF	10%	63V
2120	4822 122 33496	100nF	10%	63V
2121	4822 122 33496	100nF	10%	63V

CHIP CAPACITORS

2123	4822 122 33496	100nF	10%	63V
2125	5322 126 10223	4,7nF	10%	63V
2140	4822 122 33496	100nF	10%	63V
2141	4822 122 32542	47nF	10%	63V
2253	4822 122 32183	56nF	10%	50V
2300	5322 116 80853	560pF	5%	63V
2303	4822 122 33216	270pF	5%	50V
2306	4822 122 33496	100nF	10%	63V
2309	4822 122 33216	270pF	5%	50V
2310	5322 116 80853	560pF	5%	63V
2312	4822 122 33219	1,8nF	10%	50V
2313	4822 122 33219	1,8nF	10%	50V
2501	4822 122 33496	100nF	10%	63V
2503	4822 122 33496	100nF	10%	63V
2504	4822 122 33496	100nF	10%	63V
2550	4822 122 33175	2,2nF	20%	50V
2610	4822 122 33496	100nF	10%	63V
2611	4822 122 33496	100nF	10%	63V
2612	4822 122 33496	100nF	10%	63V
2703	4822 122 33809	22nF	20%	50V
2704	4822 122 33175	2,2nF	20%	50V

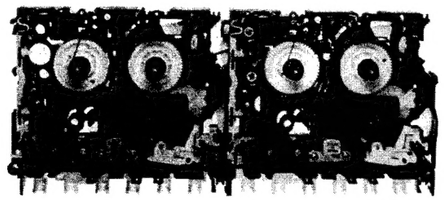
SET PARTS

4822 130 83092	LED (Volume pot)

ACCESSORIES

4822 218 10513	IR REMOTE CONTROL
4822 445 10362	LOUDSPEAKER BOX
4822 321 10831	MAINS CORD /20, /22
4822 321 10918	MAINS CORD /25

Tape transport RDN12



44 992 A11

For details and exploded view see Service Manual of tape transport RN/RR, RDN/RDR (general documentation)

Service Manual

(GB) MAINTENANCE

It is recommended to clean the recorder after approx. 500 hours of operation.

To be cleaned with alcohol or spirit

- Erase head
- Recording/playback head
- Capstan
- Pressure roller

(F) ENTRETIEN

L'appareil devra être nettoyé après env. 500 heures de marche aux points les plus importants.

Nettoyer les éléments suivants à l'alcool ou à l'alcool à brûler:

- Tête effacement
- Tête enregistrement/reproduction
- Cabestan
- Galet presseur

(NL) ONDERHOUD

Aanbevolen wordt het apparaat na ca. 500 bedrijfsuren schoon te maken

Schoonmaken met alcohol of spiritus:

- Wiskop
- Opneem-/weergeefkop
- Toonas
- Drukrol

(D) WARTUNG

Es empfiehlt sich, das Gerät nach ca. 500 Betriebsstunden zu reinigen

Reinigen mit Alkohol oder Spiritus:

- Löschkopf
- Aufnahme/Wiedergabe-Kopf
- Tonachse
- Andruckrolle

(I) MANUTENZIONE

E consigliabile pulire l'apparecchio dopo circa 500 ore di funzionamento ai punti principali.

Pulire con alcool

- Testina di cancellazione
- Testina di registrazione/riproduzione
- Capstan
- Rullo preminastro

"Pour votre securite, ces documents doivent être utilises par des specialistes agrees, seuls habetes à reparer votre appareil en panne"

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SPECIAL FEATURES

(GB) CONTINUOUS PLAY

Definition: "Play" starts on deck A (play back deck). After tape end on deck A, deck B (REC/PB – deck) will be going on with **"Play"** till tape end. Then both decks will be in **"Stop"**– mode due to full auto shut off.
Operating sequence:
1) start with **"Play"** on deck A
2) switch **"Pause"** on deck B
3) switch **"Play"** on deck B
After tape end on deck A auto stop – mechanism is working.The locked "play"– button on deck A and the "pause"– button on deck B will be released. "Play"– mode on deck B will now be active. After tape end on deck B full auto shut off will be activated.

SYNCHRO START

"COPY" from deck A to deck B
Operating sequence:
1) switch **"Pause"** on deck B
2) switch **"REC"**(one touch) on deck B
3) switch **"Play"** on deck A
In that moment when the "play"– button on deck A will be depressed the "pause"– button on deck B will be released. Now "REC"– mode on deck B will be active. Both decks will be working.
If one of the cassettes reaches tape end full auto shut off will be activated and COPY is finished.

(NL) ONONDERBROKEN WEERGEVEN

Omschrijving: Het weergeven begint op deck A (weergavedeck). Nadat op deck A het einde van de band is bereikt, gaat het weergeven door op deck B (opname/weergave–deck). Op dat moment worden beide decks geheel automatisch in de stand "Stop" geschakeld.
Bedieningsvolgorde:
1) druk op toets **"Play"** op deck A
2) druk op toets **"Pause"** op deck B
3) druk op toets **"Play"** op deck B
Nadat het einde van de band op deck A is bereikt, treedt het autostop–mechanisme in werking. De vergrendelde toets "Play" op deck A en de toets "Pause" op deck B worden dan vrijgegeven. De stand "Play" op deck B is nu geactiveerd. Nadat het einde van de band op deck B is bereikt, wordt de volledig automatische uitschakeling geactiveerd.

SYNCHROON STARTEN

"KOPIEREN" van deck A naar deck B
Bedieningsvolgorde:
1) druk op toets **"Pause"** op deck B
2) druk (een keer) op toets **"REC"** op deck B
3) druk op toets **"Play"** op deck A
Op het moment dat de toets "Play" op deck A wordt ingedrukt, wordt de toets "Pause" op deck B vrijgegeven. De stand "REC" op deck B is nu geactiveerd. Beide decks zijn in werking.
Indien op een van de cassettes het einde van de band wordt bereikt, wordt de volledig automatische uitschakeling geactiveerd en het kopiëren beëindigd.

(F) LECTURE EN CONTINU

Définition: La lecture (**"play"**) démarre sur la platine A (platine de lecture). A l'arrivée en fin de bande sur la platine A, la platine B (platine d'enregistrement/lecture) poursuivra la lecture (**"play"**) jusqu'à la fin de la bande. Ensuite, les deux platines seront en mode arrêt (**"stop"**) grâce à l'arrêt total automatique.
Ordre de fonctionnement :
1) mettez en marche avec "**Play**" sur la platine A
2) appuyez sur "**Pause**" sur la platine B
3) appuyez sur "**Play**" sur la platine B

Après l'arrivée en fin de bande sur la platine A, le mécanisme d'arrêt automatique entre en fonctionnement. Les touches verrouillées "play" sur la platine A et "pause" sur la platine B sont alors débloquées. Le mode lecture ("play") sur la platine B est à présent actif. Après l'arrivée en fin de bande sur la platine B, l'arrêt total automatique sera activé. Lorsque la touche de "sélection de mode" est en position 2 (inversée), il est alors possible d'écouter trois faces de deux cassettes en continu.

DEPART SYNCHRONISE

Pour la COPIE de la platine A vers la platine B
Ordre de fonctionnement :
1) appuyez sur "**Pause**" sur la platine B
2) appuyez sur "**REC**" (enregistrement à une touche) sur la platine B
3) appuyez sur "**Play**" sur la platine A
Au moment où la touche "play" (lecture) sur la platine A sera enfoncée, la touche "pause" sur la platine B sera dégagée. Le mode "REC" (enregistrement) sur la platine B est à présent actif. Les deux platines fonctionnent.
Si l'une des cassettes arrive en fin de bande, l'arrêt total automatique sera activé et la COPIE terminée.

(D) CONTINUOUS PLAY

Definition: "Play" beginnt auf Laufwerk A (Wiedergabe – Laufwerk). Am Bandende von Laufwerk A setzt Laufwerk B (Aufn./Wg – Laufwerk) mit "Play" fort und läuft bis Bandende. Danach sind beide Laufwerke abgeschaltet.
Bedienungsablauf:
1) **"Play"**– Taste auf Laufwerk A drücken
2) **"Pause"**– Taste auf Laufwerk B drücken
3) **"Play"**– Taste auf Laufwerk B drücken
Am Bandende von Laufwerk A arbeitet der Auto stop – Mechanismus. Die "Play"– Taste von Laufwerk A und die "Pause"– Taste von Laufwerk B werden gelöst. Auf Laufwerk B ist nun die "Play"– Funktion eingeschaltet. Am Bandende von Laufwerk B schaltet die automatische Endabschaltung ab.

SYNCHRO START

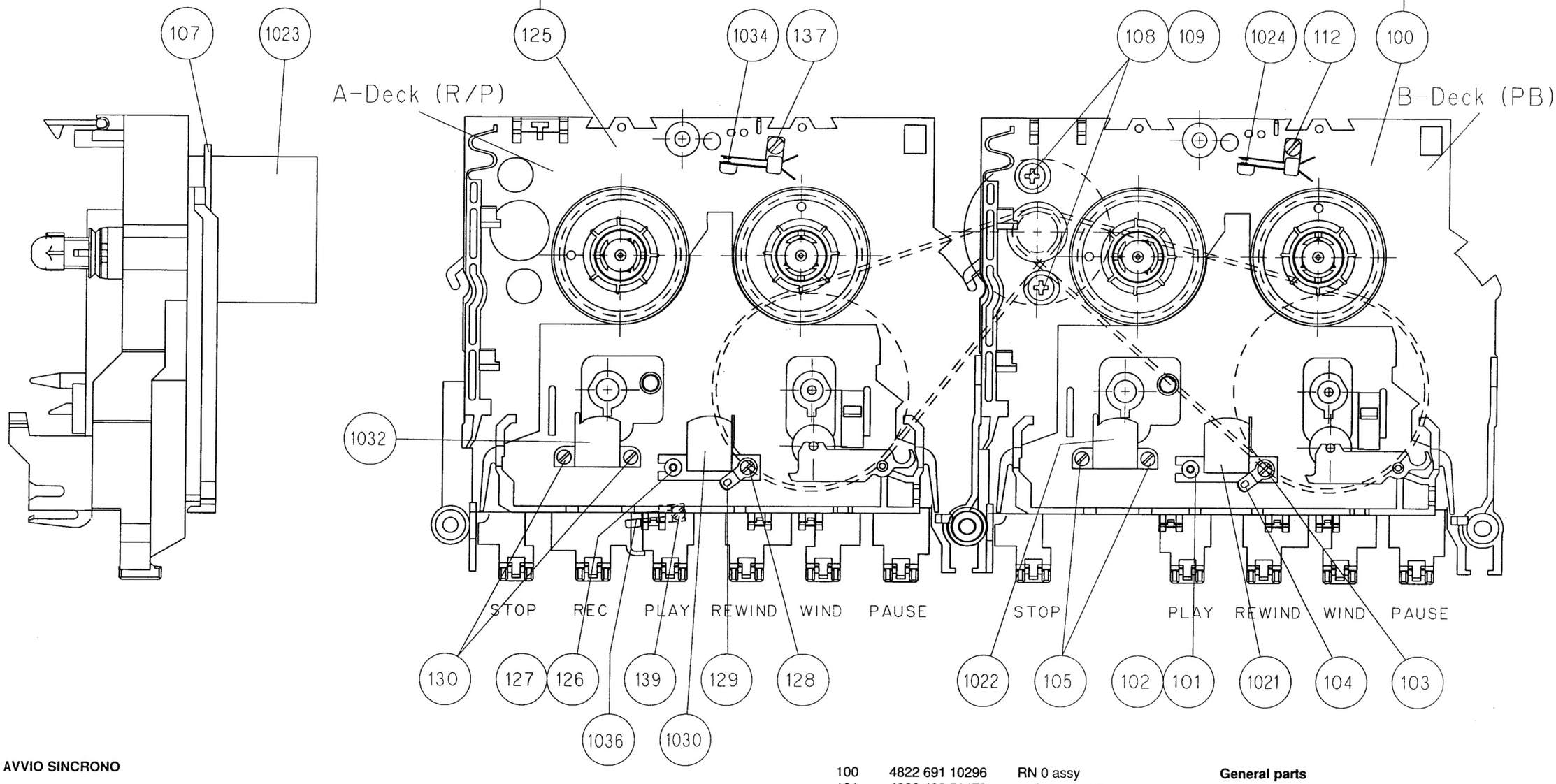
"Kopieren" von Laufwerk A auf Laufwerk B.
Bedienungsablauf:
1) **"Pause"**– Taste von Laufwerk B drücken
2) **"REC"**– Taste (one touch) von Laufwerk B drücken
3) **"Play"**– Taste von Laufwerk A drücken
In dem Moment wo die "Play"– Taste von Laufwerk A gedrückt wird, wird die "Pause"– Taste von Laufwerk B gelöst. "Aufnahme"– Modus wird dadurch auf Laufwerk B aktiviert und beide Laufwerke arbeiten.
Erreicht eine der beiden Kassetten das Bandende, schaltet die automatische Endabschaltung ab und der Kopierbetrieb wird beendet.

(I) RIPRODUZIONE CONTINUA

Funzionamento: la riproduzione inizia con la cassetta nel riproduttore A. Alla fine del nastro della cassetta nel riproduttore A, la riproduzione viene continuata con la cassetta nel registratore/riproduttore B. In tale momento, ambedue gli apparecchi vengono commutati automaticamente nel modo di arresto.
Ordine di comando:

1) premere il tasto **"Play"** sul riproduttore A
2) premere il tasto **"Pause"** sul registratore/riproduttore B
3) premere il tasto **"Play"** sul registratore/riproduttore B
Alla fine del nastro della cassetta nel riproduttore A, viene attivato il meccanismo di arresto automatico dello stesso. Viene rilasciato il tasto "Play" sul riproduttore A ed il tasto "Pause" sul registratore/riproduttore B. Viene avviata la riproduzione della cassetta nel registratore/riproduttore B. Quando è stata raggiunta la fine del nastro della cassetta nel registratore/riproduttore B, ambedue gli apparecchi vengono arrestati automaticamente.

STRIPPED VERS. WITHOUT NOTED ITEMS IS CALLED AND HANDLED AS **RN 0** 4822 691 10296



AVVIO SINCRONO

COPIATURA della cassetta nel riproduttore A sulla cassetta nel registratore/riproduttore B.
Ordine di comando:
1) premere il tasto "**PAUSE**" sul registratore/riproduttore B.
2) premere (una volta) il tasto "**REC**" sul registratore/riproduttore B.
3) premere il tasto "**PLAY**" sul riproduttore A.
Premendo il tasto "PLAY" sul riproduttore A verrà rilasciato il tasto "PAUSE" sul registratore/riproduttore B e quest'ultimo predisposto per la registratione. La cassetta nel riproduttore A viene copiata sulla cassetta nel registratore/riproduttore B. Quando viene raggiunta la fine del nastro diuna delle cassette, ambedue gli apparecchi vengono arrestati automaticamente.

100	4822 691 10296	RN 0 assy
101	4822 492 51473	spring azimuth
107	4822 529 10254	damper,motor
108	4822 502 11866	screw,motor
125	4822 691 10296	RN 0 assy
126	4822 492 51473	spring,azimuth
1021	4822 249 10397	head,Rec/Pb
1022	4822 404 10685	head,dummy
1023	4822 361 21637	motor, MSI-5U2LWDR
1024	4822 271 30598	switch indication play
1030	4822 249 10397	head,Rec/Pb
1032	4822 249 20072	head,erase
1034	4822 271 30598	switch indication play
1036	4822 278 90624	switch record

Only those parts of which a service code number is stated are service parts.

General parts

7/67	4822 520 10718	bearing plate
38	4822 520 40134	ball, bearing
40	4822 402 10037	lever, pinch roller right
41/76	4822 528 70646	pinch roller
43	4822 404 10853	slide, key lock
58	4822 358 30929	drive belt RN0 S (long)
98	4822 358 30928	drive belt RN0 D (short)
402	4822 528 20676	take-up clutch assy

(pos. number refer to exploded view in General Documentation 4822 725 23763)